



33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1.

Telephone: WHitehall 9233 (12 lines) Telegrams: "Trazette Parl, London"  
BRANCH OFFICES

GLASGOW: 87, Union Street . . . . . Central 4646  
NEWCASTLE-ON-TYNE: 21, Mosley Street . . . . . Newcastle-on-Tyne 22239  
MANCHESTER: Century House, St. Peter's Square . . . . . Central 3101  
BIRMINGHAM: 90, Hagley Road, Edgbaston . . . . . Edgbaston 2466  
LEEDS: 70, Albion Street . . . . . Leeds 27174  
BRISTOL: 8, Upper Berkeley Place, Clifton . . . . . Bristol 21930

Annually £4 10s. by post. Single copies, Two shillings.  
Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Editor: B. W. C. Cooke, Assoc. Inst. T.

Vol. 101] FRIDAY, OCTOBER 29, 1954 [No. 18

## CONTENTS

	PAGE
Editorial Notes . . . . .	477
Decentralisation of Management . . . . .	479
Southern African Railways Conference . . . . .	479
British Transport Commission Traffic Receipts . . . . .	480
Belgian Electrification Practice . . . . .	480
Trans-Zambesia Railway . . . . .	481
Letters to the Editor . . . . .	482
The Scrap Heap . . . . .	483
Overseas Railway Affairs . . . . .	484
Lodging Turns on European Railways . . . . .	486
Electric Traction Section . . . . .	487
New Signalling at Wembley Park . . . . .	492
Personal . . . . .	495
News Articles . . . . .	498
Contracts and Tenders . . . . .	501
Notes and News . . . . .	502
Railway Stock Market/Official Notices . . . . .	504

### Coal for British Railways

THE debate in the House of Commons earlier this week on the annual report of the National Coal Board produced some familiar strictures on the use of coal by the railways. Mr. Gerald Nabarro pointed out that British Railways used some 13,000,000 tons of coal last year, of which 97.2 per cent was large coal. Domestic users received 33,600,000 tons of which 89.6 per cent was large coal. This, said Mr. Nabarro, was in addition to the needs of the export markets for large coal. The production of large coal is declining year by year, and Mr. Nabarro was concerned that British Railways should be burning such a quantity every year in a manner more wasteful than that of any other industry. Shunting locomotives, he said, operate at a thermal efficiency of only 3 per cent, and modern express locomotives at only 9 per cent; the average thermal efficiency of the 19,000 steam locomotives on British Railways, he claimed, is no higher than 6 per cent, a figure which seems to be largely agreed. It is of paramount importance, in his opinion, that there should be proper co-ordination of national transport policy and national fuel and power policy; the railways should use smaller coal, briquettes, and alternative forms of trac-

tion. Electrification, he said, would release large coal for other purposes by enabling poor, lowgrade coal to be burned at the power stations. Later in the debate, Mr. L. W. Joynson-Hicks, Parliamentary Secretary to the Ministry of Fuel & Power, stated that, with the co-operation of the Minister of Transport, it had been possible to arrange for the railways to take over 500,000 tons of small coal and briquettes. A further contribution, he said, was the introduction of diesel shunting engines which were coming into service in a regular flow. The use of small coal in locomotives in this country is in fact a matter of some difficulty, as the use of large coal has usually been assumed in their design, but diesel traction will afford some small progressive relief. It seems probable, however, that mechanisation schemes for the mines, and the new mines planned by the N.C.B. will result in considerable improvement of supplies before measures taken by the railways can produce any telling effect. In the long run much will depend on the policy that the British Transport Commission adopts as to the extension of diesel and electric traction.

### Mr. B. H. Harbour

THE appointment of Mr. B. H. Harbour to become a full-time Member of the London Transport Executive to fill the gap which resulted from the elevation of Mr. A. B. B. Valentine to the British Transport Commission, will cause satisfaction particularly among London Transport Officers, but also among a far wider circle of transport men in this country. Mr. Harbour has been with the London Transport Executive and its predecessor companies since his early youth, and he is essentially a full-time practical transport officer of wide experience. Promotion to the Executive from within the ranks of the organisation is a principle highly to be commended, more particularly perhaps in the case of London Transport, which at the present time, with rising costs, needs to take the greatest advantage of the services of a man well versed in traffic operation and with the knowledge of conditions in the London area which can be applied to the most economic provision of services. Mr. Harbour is another example of the young men who served as Secretary at one time to Lord Ashfield and who later have made their mark in the organisation which will always remain as a monument to its first Chairman.

### Mr. S. W. Smart

THE retirement of Mr. S. W. Smart, Superintendent of Operation of the Southern Region, will bring to an end half a century of service with the Southern and its constituent railways. During practically the whole of that time, Mr. Smart has been very intimately connected with traffic operating and the success he has achieved in an area of extraordinarily dense traffic will always be a reminder of the energy with which he applied himself to his task. His is a personality which will be missed from the day-to-day railway scene by a very wide circle of friends and a far greater number of acquaintances. Moreover, his departure from Waterloo will break one of the remaining links, already becoming rapidly fewer, with the old company days. His name will always be associated with the development of electrification and with colour light signalling. Among his achievements, in which he has taken great and justifiable pride, has been the very high level of punctuality of Southern Region passenger trains. Mr. Smart's successor, Mr. S. A. Fitch, returns to the Southern Region after serving with distinction on the London Midland Region.

### Equipment for Railway Electrification

A CLAIM that technical and manufacturing resources are available to electrify 4,000 miles of main line in this country within the next 10 years was made recently by the Associated Manufacturers of Electrical Equipment in the course of a comment on the British Transport

Commission report for 1953. Simultaneously with this, they claim suburban electrification schemes could be carried out for cities such as London, Glasgow, Manchester, Birmingham, Newcastle, and Edinburgh. They advocate use of diesel-electric locomotives on main lines where the industrial loading does not justify full electrification, but the use of multiple-unit diesel railcars is recommended only for rural feeder services where the volume of traffic cannot justify expenditure on electrification. Government circles are stated to be still unaware of the tremendous economic significance of the railway transport system, and what must now be done by electrification to intensify carrying capacity. Every penny spent in development, it is emphasised by the electrical manufacturers, is a certain investment in the future of British industry.

### Overseas Railway Traffics

**T**RAFFIC receipts of the Salvador Railway for June, the last month of the financial year, were colones 145,000, against colones 136,000 for June, 1953. Aggregate receipts for the year were colones 2,616,000, an increase of colones 259,000 on the previous year. In July receipts fell slightly to colones 141,000, but rose sharply in August to colones 176,000. Gold Coast Railway receipts for August were £124,094, a decrease of £26,618 on the corresponding month of last year. Aggregate receipts from April 1 were £1,487,436, a decrease of £144,602 on the figure of £1,632,038 for the same period of 1953. Peruvian Corporation gross receipts for September were soles 11,200,000 and bolivianos 38,781,000, an increase of soles 926,000 and a decrease of bolivianos 8,995,000 on the September, 1953, figures. The aggregate figures for the three months of the year to September were soles 33,938,000 and bolivianos 108,335,000, an increase and decrease respectively of soles 2,594,000 and bolivianos 27,908,000 compared with the same period last year. The Peruvian average remittance rate in September was soles 54.50 to the £, as against soles 46.00 in September, 1953. The Bolivian rate of bolivianos, 537.08 to the £, was the same as in September, 1953.

### Encouraging the Business Traveller

**A** FURTHER example of vigorous effort to obtain more business is the introduction by British Railways from November 1 of a new travel facility—Business Travel Season Tickets. Any firm or undertaking which makes a direct payment to British Railways of £5,000 a year in merchandise rail charges will be eligible for one of these tickets, which will be available for an unlimited number of journeys over a route or group of routes (at the holder's choice) covering not less than 100 miles. The cost will be about 25 per cent less than an ordinary season ticket over the same routes. Normal break of journey will be allowed. First and third class tickets will be obtainable, available for 3-12 months. They will be issued not only to principals of firms, but also to representatives fully employed on the firms' business. A further ticket may be purchased against each additional freight payment of £5,000 a year by the same firm. The new facility should promote business travel, and should do not a little to encourage the consignment of merchandise by rail.

### Increased Activity of the I.R.S.E.

**F**OR some time the Council of the Institution of Railway Signal Engineers has been trying to extend the scope of its work, to make that body more widely known and appreciated, and useful to many who, under articles of association for some time obtaining, could not become Members. With this object the articles were revised two years ago and a welcome increase in membership has since been recorded. Of late years also the holding of meetings in the provinces, a feature of the Institution work before the war but on a very small scale, has been resumed successfully and now a local section has been established at York, with activities extending throughout the session,

something not seen for many years. The current programme of events contains, besides the usual seven London meetings, six at York, one at Derby, one at Manchester, and another at Bristol, with papers on a variety of subjects. For the opening meeting in London yesterday, a paper was arranged to be read on signal engineering developments in Germany by Herr G. Reschuh, a leading authority, in pursuance of the policy of the Council of inviting a signal engineer from outside the United Kingdom to inaugurate each session.

### Lodging Turns Abroad

**T**HE examples of practice on Continental railways in the matter of lodging turns given in the article elsewhere in this issue show that the necessity for such turns is widely accepted both by railway managements and staff. Variations in the cost of living make it hard to compare the monetary benefits to engine crews in different countries; but, apart from the provision of free accommodation for staff working lodging turns on the Continent, the position in this country seems, in general, to compare favourably with that abroad. Despite this, we are not aware of any recent case of refusal to work lodging turns in Continental countries; our information is that there is no difficulty in obtaining crews for these turns, although, in general, their incidence is greater than in Great Britain. It is to be hoped that the advantages, to employee as much as to employer, of a practice which results in economic and efficient operation, with not inconsiderable financial benefit to the employee, will be universally realised in Great Britain.

### Experiment and Standardisation

**I**N the motive power for the Valenciennes-Thionville electrification, described on another page, the French National Railways have combined a variety of technical features with a wide range of standardised parts. For example, each of the four locomotive classes will give operating experience with a different method of applying single-phase, 50-cycle a.c. to traction, but both Bo-Bo types use the same type of mechanically-operated controller, and have similar bogies, suspension, and flexible transmission systems. The Co-Co locomotives also share a common type of bogie, and it is noteworthy that both suspensions are derived closely from the mechanical systems of S.N.C. main line 1,500 V. d.c. classes with the same wheel arrangements. All the Valenciennes-Thionville locomotives have central cabs, and our illustrations on other pages this week show how skilfully this feature—once considered outmoded—has been embodied in an overall appearance expressive of the advanced technique which these locomotives represent. A less evident but highly important form of standardisation is the use in all four classes of three-phase auxiliary motors supplied from Arno converter sets. The fact that the industrial frequency enables the industrial type of electric motor to be used for many services is an advantage of the 50-cycle system of which relatively little has been heard so far.

### Push-Button Signalling at Wembley Park

**T**HE method of operating the remotely controlled lever system not from miniature levers but a push button desk, applied by London Transport Executive two years ago at Ealing Broadway and described in our issue for November 28, 1952, proved so satisfactory that it was adopted for the resignalling of the larger layout at Wembley Park. During the past year, this has been considerably modified to allow complete separation of the Metropolitan and Bakerloo services—the latter now run directly to and from the Stanmore line without interference—and to provide six running lines through the station. Completion of the work has enabled some crossover connections to be abolished and has eliminated certain sources of delay formerly in evidence, as explained in an article elsewhere in this issue, while permitting some trains to be accelerated. The desk worked by the signalman now controls the levers

in the original individual lever frame, which was shortened, fitted with mechanical locking and adapted to be actuated by air cylinders in the manner already seen at several places on London Transport railways.

### Battery Locomotives for Scotland

**D**ISCUSSIONS between the British Transport Commission and the North of Scotland Hydro-Electric Board on the use of battery-driven locomotives in Scotland were mentioned in the House of Commons last week by Mr. James Stuart, Secretary of State for Scotland. The use of Scottish electricity to charge battery locomotives is a measure which has been credited widely to Mr. Stuart himself, but it is clear from his reply to the question put by Mr. Hector Hughes on this subject that he has not taken part in the consultations. To the question of when and where such locomotives are to be available for use, no reply was vouchsafed, but it seems unlikely that matters have progressed beyond the stage of discussions between the two bodies concerned. The use of fuel produced in Scotland, and possibly supplied at advantageous rates, has obvious attractions, but whether the first cost of such locomotives would outweigh such advantages is a question difficult to answer until the type of locomotive envisaged and the duties for which it would be used are known.

### Decentralisation of Management

**T**HE creation of "subordinate organs of management" as a means of decentralisation within the Regions of British Railways is one of the proposals contained in the recent White Paper on railway reorganisation. At headquarters level in the Regions co-ordinating departmental activities and preserving a balance between them is one of the functions of the Chief Regional Manager and his staff, a task made difficult by the size of the headquarters staff, the number of departments, and the volume of business. The lack of formal organisation for positive general management or co-ordination at a lower level than headquarters is thought by some to result in a tendency at meetings where all the parties represent departments for the results to be negative for want of a representative of authority to press the case. In the view of Mr. R. L. Charlesworth, Traffic Costing Officer (Paddington), British Transport Commission, expressed in his article entitled "The Extension of General Management" in the August issue of *British Transport Review*, the Regional organisation suffers from having too many thinking departmentally and too few concerned for the concern as a whole.

The alternative forms of decentralised management seem to him to be the complete form found in the divisional organisation of the German railways and the Area general management of the former L.N.E.R. On the L.N.E.R., however, the areas were reasonably self-contained, being based on the organisations of the constituent railway companies. The difficulties of achieving co-ordination were mitigated by the system of departmental committees designed to co-ordinate the policy and function of each department. Such a system of decentralisation would be difficult to introduce into some of the larger Regions of British Railways. In the absence of suitable ready-made areas it would probably be desirable, according to Mr. Charlesworth, to use some rather smaller unit of management than the former L.N.E.R. areas. The area of the North Eastern Railway is seen as probably the largest possible unit of efficient management. It was said of the North Eastern Area of the L.N.E.R. that no important centre was so far from headquarters that an officer could not visit it and also spend part of the day in his own office. The size of the units would have to be small enough to allow constant and easy contact between officers, the pre-requisite of effective decentralisation.

A degree of general management at a level below headquarters but without involving the expense and complications of setting up full-scale area managements might be achieved by appointing local managers who would exercise

some of the powers of the Chief Regional Manager in a particular area. Mr. Charlesworth defines his sphere of action and lists four objectives in seeking to achieve which the local manager would deal with some matters on his own authority and others by powers delegated either by the C.R.M. or a chief departmental officer. The local manager's function, as he sees it, would be simply to intervene when better co-ordination and quicker decisions could be made at his level.

As the district officer is the highest official whose duties allow him still to be in reasonably close relation with the men "on the ground" and is also the senior representative of management available to most of the public and staff, his powers should be as unrestricted as possible. The effectiveness of the collaboration between him and the local manager would therefore depend largely on the degree of authority delegated to each. Mr. Charlesworth does not consider insuperable the difficulties of working out the details of any form of decentralised management, provided no attempt is made to produce a standard pattern. In some districts, where the areas of the departmental officers are co-extensive and there is an obvious common centre, a district manager might be appointed with full responsibility for all departments. The Chief Officer for Scotland of the former L.M.S.R. and the present South Wales Area Officer of the Western Region are precedents for the more limited type of decentralised management. The latter officer represents the C.R.M. in that area, and carries out certain delegated functions.

One of the most difficult aspects of decentralisation is that of financial measurement. The problem of finding a means of measuring the results of local management activity is being thoroughly investigated, and if suitable techniques can be evolved this will radically alter the question. Though the local manager's importance might increase greatly—and Mr. Charlesworth thinks that he might become the co-ordinator of rail and road services—his staff in the earliest stages should be small. By starting with a small experimental organisation, the degree of general management which could be exercised by the local manager could be worked out in practice.

### Southern African Railways Conference

**T**HE main object of the recent Conference of General Managers of Railways in Southern Africa, in Johannesburg, referred to editorially in our last week's issue, was a general exchange of views coupled with technical discussions to achieve more efficient administration and operation wherever possible. The 71 items on the agenda covered a wide range of railway operation. One of the principal subjects discussed was the capacity of single-track railways with the object of introducing technical improvements to increase traffic density. Related to this subject were the possibilities of centralised traffic control, signalling improvements, more particularly by means of remote control, the development of telecommunications with particular reference to radio, and intercommunication between trains by means of radio. The conference unanimously agreed that considerable benefits could be achieved by the standardisation of equipment and to this end it was decided to continue collaboration between the appropriate technical departments of the railways. The following systems were represented by directors and general managers: South African Railways & Harbours; Rhodesia Railways; Nyasaland Railways Limited and Trans-Zambesia Railway Co. Ltd.; East African Railways & Harbours; Cia. do Caminho de Ferro de Benguela; Cie. du Chemin de fer du Bas-Congo au Katanga; Cie. des Chemins de fer du Congo Supérieur aux Grands Lacs Africains; Ports, Railways & Transports Services of Mozambique.

It was agreed that the through booking and documentation of freight traffic should be encouraged and particular mention was made of traffic passing through Dar es Salaam to and from the Belgian Congo in relation to the opening of the Kabala-Kamina link in the Belgian Congo;



this line will afford through rail connection from the east to west coasts of Africa and southwards to the South African and Rhodesian railway systems. Improved procedures for the achievement of efficiency and economy in storekeeping, the procedure for improving workshops technique and the reclamation and re-use of worn parts, and the suitability of African timbers for railway sleepers were discussed. The practicability of using refrigerator wagons with self-operating compressor units and the methods of insulation used by the Central and Southern African railways were examined. Many other matters of a technical nature were debated with the object of giving the best possible service to the public consistent with economy, and the possibilities of mechanisation to save labour costs and speed traffic movement and maintenance received attention. Having regard to the vital interdependence of port and railway operation, and to the fact that the three larger railway organisations in Southern Africa operated ports, it was agreed that port administration and operation should be covered at the next conference.

The arrangements for the conference in Johannesburg were made by the South African Railways & Harbours Administration and the delegates were enabled to inspect many of the new railway developments and industrial undertakings in South Africa. Functions were arranged for the entertainment of the delegates and a dinner was given by the Federated Chamber of Industries and the Associated Chambers of Commerce of South Africa at which Mr. A. F. Kirby, General Manager, East African Railways & Harbours, was a speaker. The next meeting of the Conference will be held in Nairobi in November, 1955.

### British Transport Commission Traffic Receipts

**B** RITISH RAILWAYS passenger receipts for Period 10, the four weeks ended October 10, again fell sharply from those of the previous period. A seasonal fall was to be expected, but the decrease of £1,918,000 from Period 9 this year exceeds that of £1,831,000 last year by £87,000, and the receipts for the period are £154,000 less than those for the corresponding period last year. The aggregate increase for this traffic over last year has now fallen from £1,360,000 at the close of Period 7 to £712,000. There seems little doubt that, when every allowance has been made for the weather this year, traffic is declining.

	Four weeks to October 10		Incr. or decr.	Aggregate for 40 weeks		Incr. or decr.
	1954	1953		1954	1953	
	£000	£000	£000	£000	£000	£000
<b>Passengers—</b>						
British Railways ...	8,648	8,802	— 154	92,319	91,607	+ 712
London Transport—						
Railways ...	1,495	1,419	+ 76	14,380	13,829	+ 551
Road Services ...	4,058	4,080	— 22	39,255	38,260	+ 995
Provincial & Scottish buses ...	4,133	4,237	— 104	40,120	39,397	+ 723
Ships ...	473	503	— 30	5,019	4,819	+ 200
<b>Total Passengers</b> ...	<b>18,807</b>	<b>19,041</b>	<b>— 234</b>	<b>191,093</b>	<b>187,912</b>	<b>+ 3,181</b>
<b>Freight, Parcels &amp; Mails—</b>						
British Railways—						
Merchandise & live- stock ...	8,807	8,806	+ 1	84,465	82,092	+ 2,373
Minerals ...	3,475	3,442	+ 33	34,612	34,140	+ 472
Coal & coke ...	9,581	8,680	+ 901	87,733	82,237	+ 5,496
Parcels, etc., by passenger train ...	3,298	3,058	+ 240	31,050	29,407	+ 1,643
<b>Total British Railways</b> ...	<b>25,161</b>	<b>23,986</b>	<b>+ 1,175</b>	<b>237,860</b>	<b>227,876</b>	<b>+ 9,984</b>
British Railways C.&D. Others* ...	939	921	+ 18	9,317	8,923	+ 394
<b>Total Freight, Parcels &amp; Mails</b> ...	<b>6,021</b>	<b>6,929</b>	<b>— 908</b>	<b>61,320</b>	<b>64,320</b>	<b>— 3,000</b>
<b>Total</b> ...	<b>50,928</b>	<b>50,877</b>	<b>+ 51</b>	<b>499,590</b>	<b>489,031</b>	<b>+ 10,559</b>

\* Inland waterways, freight haulage, and ships.

Merchandise and livestock figures did not maintain the improvement shown in Period 9, and were only £1,000 above those for the same period last year, when the gain between periods was considerably greater. Mineral traffic

also failed to maintain the increase shown in the previous period, but was £33,000 more than in the same period of 1953. Some compensation was offered by the improvement in coal and coke traffic, which, with receipts of £9,581,000, was £901,000 more than last year. Receipts from parcels also maintained a high level at £3,298,000, and the combined receipts for freight, parcels, and mails were £1,175,000 more than last year.

London Transport railways receipts showed a little improvement on the previous period and were £76,000 more than for the same period last year. This improvement is offset to some extent by the receipts from road services, which failed to equal the increase between periods of last year and were £22,000 less than for the same period of 1953.

With provincial and Scottish buses there was a fall in receipts, compared with Period 9, like that of last year, and at £4,133,000 receipts were £104,000 less than the 1953 figures. Aggregate receipts from this source have now dropped to £723,000 over the aggregate for 1953 for the corresponding period. Passenger shipping receipts fell steeply, as was to be expected at the end of the holiday season, and were £30,000 less than in the corresponding period last year. Inland waterways, freight haulage, and shipping receipts were £908,000 less than in the same period last year. The aggregate decrease from this source is now £3,000,000.

The general picture of falling traffics, from what must be a combination of reasons rather than one predominant cause, is perhaps best shown by the fact that on aggregate receipts for the year to October 10 amounting to £499,590,000, the increase over 1953, in spite of higher charges, is only £10,559,000.

### BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS PERCENTAGE VARIATION 1954 COMPARED WITH 1953

	Four weeks to October 10	40 weeks to October 10
<b>British Railways—</b>		
Passengers ...	— 1.7	+ 0.7
Parcels ...	+ 7.8	+ 5.5
Merchandise & livestock ...	...	+ 2.8
Minerals ...	+ 0.9	+ 1.3
Coal & coke ...	+ 10.3	+ 6.6
<b>Total</b> ...	<b>+ 3.1</b>	<b>+ 3.3</b>
C. & D. services ...	+ 1.9	+ 4.4
Ships (passengers) ...	— 5.9	+ 4.1
<b>British Road Services, Inland Waterways, and Ships (cargo) ...</b>	<b>— 13.1</b>	<b>— 4.6</b>
<b>Road Passenger Transport, Provincial &amp; Scottish ...</b>	<b>— 2.4</b>	<b>+ 1.8</b>
<b>London Transport—</b>		
Railways ...	+ 5.3	+ 3.9
Road Services ...	— 0.5	+ 2.6
<b>Total</b> ...	<b>+ 0.9</b>	<b>+ 2.9</b>
<b>Aggregate</b> ...	<b>+ 0.1</b>	<b>+ 2.1</b>

### Belgian Electrification Practice

**U**NTIL the postwar electrification programme was undertaken the choice of 3,000 V. d.c. for the Brussels-Antwerp electrification of the Belgian National Railways was a matter mainly of local interest. Now that the Netherlands Railways have electrified extensively at 1,500 V. d.c., the question of different systems existing on routes with through traffic assumes more general significance. The position has been discussed by Monsieur Jules Musyck in a contribution to the *Bulletin de l'Union des Exploitations Electriques en Belgique*. In his capacity of Ingénieur en chef honoraire to the S.N.C.B., the author is responsible for co-ordinating the development and execution of the electrification programme. We are indebted to him for a reprint of his article, which concludes with an examination of the factors which have justified the use of 3,000 V. d.c. on the Belgian system.

As time goes on, Monsieur Musyck considers, operating and economic results will reinforce the arguments in favour of the choice. The geography of Belgium and its railways has made it unnecessary to erect special high-



tension lines along the railway routes, and eventually the average distance fed per substation will be 29 miles. Developments aimed at reducing the first cost of equipment and of its maintenance are being studied continuously. It is felt, therefore, that in the special case of Belgian railway electrification the comparison with a 50-cycle a.c. system is favourable, particularly when it is considered that the advantage of using the industrial supply is shared, but the liability to unbalance the three-phase network is avoided. Some engineers think that there has been undue concern over the unbalancing effects of a single-phase traction load. Experience on the first stage of the French National Railways Valenciennes-Thionville electrification may soon clarify this matter to some extent, although local conditions are always likely to have so important an effect that it will be difficult to generalise.

The author refers to press reports of discussions concerning the introduction of a fast and frequent service of motor coach trains between Brussels and Amsterdam, and he regards the 3,000 V. d.c. system as one in which motive power equipment can be modified for interrunning on 1,500 V. lines without elaborate or costly modifications. This view is confirmed in the findings of the B.T.C. report on Electrification of Railways, which also referred to similar possibilities with four-motor locomotives. The Bo-Bo wheel arrangement is common to all classes on the Belgian National Railways, as described in our August 6 issue, so that through working of locomotive-hauled passenger and goods trains might also be considered. Flexibility in their sphere of working would be a useful extension of the adaptable operating characteristics which have been achieved in the Belgian locomotives by a high degree of field-weakening. Monsieur Musyck emphasises that the complication of compensating windings in the traction motors has been avoided, and it is interesting that French practice is moving in the same direction of uncompensated motors with satisfactory commutation at low field values, this being a feature of the latest high-speed S.N.C.F. Bo-Bo prototype (see our September 4, 1953, issue). Importance is attached to long through locomotive workings, and with interrunning it might be possible to exceed the 220 miles quoted for some internal services.

Speaking of the broad lines of electrification policy in Belgium, Monsieur Musyck shows the importance attached to diverting new traffic over electrified lines. Heavy iron and steel products entering the country at Athus, for example, will be routed over the electrified Luxembourg line through Jemelle to Namur instead of travelling by the so-called Athus-Meuse line through Bertrix and Yvoir. The latter will retain its mineral traffic, but will be modernised by the substitution of diesel-electric traction. Electrification to Ostend has brought an example of passenger traffic being diverted in this way, by giving Alost and Denderleeuw an electrified connection with the fast lines to Brussels. The principle followed in the electrification programme has not been conversion for its own sake but the attainment of as high a ratio as possible of traffic electrically hauled to route-mileage electrified.

### Trans-Zambesia Railway

THE report for the year ended December 31, 1953, of the Trans-Zambesia Railway Co. Ltd., of which Mr. Vivian L. Oury is Chairman, shows that after taking into account interest on investments and providing for taxation on current profits, tax equalisation reserve, provision for accidents, and other minor adjustments, and after meeting the service of the 3½ per cent First Debenture stock, £22,500 was available for interest on the £1,500,000 5 per cent Income Debenture stock—equivalent to 1½ per cent. Provision for renewals this year amounts to £47,412 compared with the previous year's figure of £41,014. The increase in this provision is a corollary to the acquisition of new rolling stock and other equipment at present-day prices, based on the original cost and estimated life of the equipment.

As a result of a collision in March of this year, three members of the staff lost their lives, and heavy damage was caused to rolling stock, including two "G" class locomotives—one damaged beyond repair. The board has decided to make provisions in the accounts towards meeting liabilities arising out of accidents and has set aside the sum of £23,998 for this purpose.

The following are some of the principal results:—

	1952	1953
Goods tonnage ... ..	398,164	513,106
Goods receipts ... ..	482,809	547,147
Livestock & vehicle receipts ... ..	7,086	6,345
Passenger receipts ... ..	98,226	102,405
Baggage & parcels receipts ... ..	14,044	13,353
Gross receipts ... ..	608,433	675,765
Working expenses ... ..	451,523	521,767

Although there was a satisfactory increase in gross receipts, working costs have again increased to an even greater extent, so that net operating receipts were slightly lower than those of the previous year. This trend of higher receipts being more than offset by higher operating costs has prevailed for several years, and, the report states, it became obvious that it would be necessary for the company to relinquish its position of being probably the only railway in the world which has not increased its rates since the war. Consequently in November, 1953, an increase in goods rates was brought into force.

The increased traffics and a 28 per cent increase in the mileage run by the locomotives is reflected in the higher operating costs under the headings of traffic expenses and locomotive and vehicle running expenses respectively in the revenue account. The board also decided to set aside the sum of £10,000 for deferred locomotive repairs.

In all but one of the postwar years it has been possible to announce higher tonnages carried by the railways; the extent of which may be gathered from the tonnage for the year 1945 (176,468) against the tonnage for 1953 (513,106). It therefore became necessary to review possible future requirements of rolling stock and orders were placed for four further "G" class locomotives, 55 high-sided open wagons, 23 covered wagons, five cattle wagons, and a tank car. The four locomotives are already in service; the report points out that they were built in Germany "where very advantageous delivery dates were obtainable." It is hoped to take delivery of the wagons in the latter half of this year. This rolling stock is being financed by the Government of Nyasaland from which the company is acquiring them through the medium of a hire purchase agreement.

A programme of ancillary works has been put in hand to provide more staff houses, improved station layouts and track running, extra crossing loops, and to augment the always difficult water supplies. To finance these works, the first phase of a five-year programme, the Government of Nyasaland has agreed to make temporary advances to the company up to £128,000 bearing interest at the rate of 5 per cent per annum. The form of security to be issued in exchange for these temporary advances has yet to be agreed.

The Moatize Mine, from which the railway obtains the greater part of its coal supplies, encountered certain technical difficulties during the year and was unable to supply the quantity of coal required. To prevent stocks from falling to a dangerously low level the company was forced to buy South African coal at very high prices; this was an additional factor contributing to increased locomotive running costs.

The freight handled at the port of Beira (2,476,376 tonnes) again was a record. Improvements to the port are constantly being carried out by the Portuguese authorities by new installations and extensions. Considerable progress also has been made on the construction of many new buildings in the Beira township. The report states that it is understood that the Caminho de Ferro da Beira is considering doubling the line from Beira to Dondo, over which the T.Z.R. has running powers, and that work on the first section is likely to begin in the near future. The reconstruction of Dondo Station is proceeding apace and will greatly facilitate the interchange of through wagons to and from the Rhodesias.

## LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

### Western Region Record Run

October 18

SIR,—Why all the publicity given to the run of a light train over 227 miles at a speed of rather less than 63 miles an hour? As long ago as 1935 the "Silver Jubilee," a train of seven vehicles, covered the 232 miles between Darlington and Kings Cross, twice each day—five times a week—in 3 hr. 18 min., or at a speed of 70.3 m.p.h.

More remarkable in some ways was the "Coronation" regular run in 1937 from Newcastle to Kings Cross, 268 miles in 3 hr. 57 min., a speed of nearly 68 m.p.h. The "Coronation" was made up of nine coaches weighing 312 tons. Yet on the down journey it ran the 188 miles from Kings Cross to York in 2 hr. 37 min.—a speed of 71.9 miles an hour. In the course of the down trip the 120 miles to Newark were covered in 100 min. Those were the days!

Yours faithfully,

DUNELMIAN

Wolsingham, Co. Durham

### Communication Between Driver and Guard

October 8

SIR,—I have followed with interest the correspondence dealing with methods of communication between guard and driver on trains not fitted with continuous brake. In your issue of September 17, Mr. Courtenay Barry writes "All goods trains should be fitted with continuous brakes. Admittedly freight trains in the U.S.A., are longer and heavier than in Britain, but—"

The implication of this statement is that the fitting of continuous brakes is a consequence of the trains being longer and heavier; but I feel the converse is really the case, that longer and heavier trains follow upon the fitting of continuous brakes. The average freight crew in this continent handles tonnage equivalent to four or five goods trains in Britain. As a result, crew costs and track occupancy are much reduced, and heavy traffic movements are handled regularly over single track main line which with shorter trains would long ago have required doubling. The number of locomotive movements is similarly lower, permitting smaller engine depots with reduced servicing costs.

Yours faithfully,

W. SERGEANT

Suite 112, Princeton Apartments,  
183, Berry Road, Etobicoke, Ontario

### Railway Freight Movement

October 16

SIR,—In his comment in your issue of September 24, on the first part of my article, "A Paradox of Modern Railway Management," Mr. G. V. O. Bulkeley, referring to extravagant capital expenditure leading to frequent periods of idle time, admirably illustrates my whole argument, for he considers wrong criteria.

The acquisition of additional wagons should depend solely on whether capital so invested will be remunerative, not on whether the wagons will be idle for periods in the year. The waste involved in idle time is a purely technical consideration of no importance whatsoever. Capital expansion should take place as quickly as possible, not progressively, until marginal productivity is reached, and this can be measured. The adoption of this approach leads to entirely different results.

Contradictions, which are inevitable if arbitrary standards of judgment are applied to the problem of satisfying peak demands, are then avoided. The problem of capital expansion is then solvable in precise terms, not in terms of some kind of happy medium.

The piles of groundnuts in Nigeria, lasting from one season to the next, have been a feature of the economy of the country for 10 years or more, a long time to attribute to the tardiness of manufacturers in meeting orders. Mr. Bulkeley's views tend to confirm what I have implied, that the real cause is the confusion between technical and economic data in assessing capital needs—the failure, in other words, to adopt the correct criteria. The distinction may be subtle but it is of supreme importance.

It would clearly be of interest to know what policy was adopted in Nigeria, before 1939, towards those traffics where the railways did not enjoy a monopoly, in the case, for example, of the higher-rated traffics at shorter distances from the ports.

The experience in the port of Freetown is that shipping competes for cargoes. The transit sheds are congested not with exports, but with imports that the railway cannot move any more than it can move all the piles of produce offered for transport at the other end of the line. This situation has its parallel elsewhere.

There have been five successors to Mr. Bulkeley as General Manager of the Nigerian Railway, and six Traffic Managers since his time—ample opportunity for wide variations of opinion, if arbitrary standards and irrelevant criteria have been applied to the problem of assessing capital requirements, rather than the correct technique of measurement. My concern is with policy, not with persons.

Yours faithfully,

A. R. G. SAUNDERS

c/o General Manager's Office,  
Sierra Leone Railway,  
Freetown

### A Subsidy for the Railways

October 7

SIR,—The following extracts from the article in your September 17 issue seem to put both sides of the question: (a) "Railway transport is essential to the national economy, but there is no reason why it should not be paid for by those for whom it is provided"; and (b) "On the other hand, if transport users are to pay charges which enable British Railways to pay their way, the charges must not be such as to price the railways out of the market."

Therefore, if British Railways cannot obtain the necessary revenue from transport users without running the danger of pricing themselves out of the market, what is the remedy? How would "So what" do?

I think this would be an appropriate answer because, in my opinion, the responsible members of successive Governments for at least the last 30 years, must have observed the problem developing; yet nothing has been done, nor does there seem to be any intention of tackling the problem.

Yours faithfully,

H.F.D.

London

[The remedy is mainly a matter of the railways reducing their costs by increased efficiency and of attracting more business.—ED., R.G.]

---

FABRICATION BY WELDING.—Fabrication of steelwork by welding is accepted practice. Furthermore, the experience gained in this field of engineering, has led in many cases to the manufacture by fabrication of many components, such as engine bedplates, gearboxes, valves and so on, with considerable saving in manufacturing costs, and saving in weight. These items were normally considered as suitable only for steel and iron castings. The fabrication of steel and allied subjects will be dealt with in a series of six illustrated leaflets entitled "Originating," the first of which has recently been issued by the Lincoln Electric Co. Ltd., Welwyn Garden City, Herts.

## THE SCRAP HEAP

### Expense Account Travellers

Before the war an experienced railway traveller, when there were two queues at two booking windows, would choose the queue with the fewest women in it, even if it were longer. This was because women ask for the ticket first and then get out their purses to pay the fare, whereas men have their money ready. But today this law no longer applies, since one is unable to tell who has got those maddening little pieces of paper allowing them to travel at someone else's expense (very often yours and mine), which take so long to fill in that one generally misses one's train. To get a ticket at Paddington, always allow a quarter-of-an-hour, and allow longer for Euston.—*John Betjeman in "The Spectator."*

### Any Questions

I had a few minutes to wait for a train (writes "B.") and found the collector at the barrier disposed to talk. "Funny questions?" he said. "Yes, but in time they get a bit monotonous."

"The pet question has to do with the next train. It goes like this: 'What time is the next train to So-and-so?' I give the time and nine times out of ten get the reply, 'Oh, isn't there one before that?' Closely related is the woman—it's usually a woman—who asks, 'Has the next train gone?' I always make the same answer: 'It hardly ever has, madam.' I remember one woman handing me a note with a request that I give it to the tall man who stammered and who always came for the 6.30. I've still got that note and—well, the tall man may still be

catching the 6.30 and stammering. And as for the people who give up the wrong half of their tickets—thousands of 'em, just like you did just now!"—*From "The Manchester Guardian."*

### Crated Traffic

Railwaymen at Hamburg broke open a crate after they had heard cries for help and found a Hungarian mechanic inside. He had spent two weeks inside the crate with only a few loaves of bread and bottles of soda-water. He has now applied for political asylum in West Germany. It was, he said, his third attempt to escape.

### The Old Order Changeth

A General Electric Company diesel-electric shunter, placed in service on the Baltimore & Ohio Railroad over a year ago, pushed into position in its final resting place in the B. & O. Transportation Museum at Baltimore one of the 20 motive power exhibits that form the major feature of the museum. These include *Tom Thumb*, first American-built locomotive, and the "Number 51," claimed to be the first streamline diesel-electric locomotive ever operated.

### No Complaints

Why all this screaming by travellers about the increased fares? Has everyone forgotten the uncertain, dirty, ill-lit steam trains of the old days?

I am well content with the wonderful service we get on our Central Line.

In the rush hours there is a train every few minutes and even the "sardine" conditions do not have to be

suffered for long, so rapid is the rate of travel.

Here's thanking London Transport for a jolly fine service, clean seats, good lighting and a regular, speedy system on which a traveller can rely.—*From a letter to "The Star."*

### Indian Railways Publicity



*Reproduction of coloured sticker attached to Indian railways' outgoing foreign correspondence*

### Progress Report

The other day I had to laugh On reading in my *Telegraph* Some candid comments about fuel Supplied by Mr. R. S. Youell, Which cannot fail to irritate Some who have sought my blood of late.

Long since by-passed as out of fashion, I've never quite acquired the passion For dubbing everything *declassé* That may appear a trifle *passé*: Likewise, no fitful diesel dream Can shake friend Youell's faith in steam.

But we're not so ingenuous As to ignore the obvious, In fact, we're perfectly aware That "Dismal Diesel" does his share. Our only indignation springs To arms when he's endowed with wings.

Electric traction's welcome aid Also demands the deference paid To silent service. As it comes In countless unseen amps and ohms To minister to our desire, Uncomprehending, we admire.

A truce, then, to this argument; Let's back whatever they invent, Whether electric, steam or oil, To help us in our daily toil. Conceding this I still protest I like my dear old puffer best.

A. B.

### Marooned



*Photo*

*[H. J. Pedersen]*

Wagon and length of track left when permanent way was lifted on abandonment of a Danish narrow-gauge railway



## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### SOUTH AFRICA

#### Passenger Journeys

The total passenger journeys recorded during 1953-54 were 275,039,245; for the previous financial year, the total was 268,743,476. The increase of 6,295,771 journeys was largely accounted for by an increase of 6,132,105 in suburban passenger journeys which advanced from 238,742,090 during 1952-53 to 244,874,195 during the following year. Third class journeys numbered 134,081,422 last year as against 128,163,746 during the preceding year. A considerable proportion of the increase of 5,917,676 on third class journeys is accounted for by the ever-increasing use of train services being made by the non-European population on the outskirts of Johannesburg.

#### Coal Traffic

Coal moved by rail from Transvaal and Natal collieries during August amounted to 2,041,168 tons. Transvaal production fell from 1,716,919 tons during August, 1953, to 1,686,095 tons this month, a drop of 30,824 tons, and 355,703 tons were moved from Natal mines in comparison with 388,508 tons during August last year, a drop of 33,435 tons. The railways thus moved 64,259 tons less this month than in August, 1953. During the first eight months of the calendar year (January to August), the railways moved 16,689,073 tons of coal from the coal mines, a reduction in comparison with the corresponding period of the previous year of 99,897 tons.

A feature of August traffic was the emphasis on general goods. Many loaders made determined attempts to get as much traffic as possible on its way before the application of the new charges. Revenue for goods was at record levels for two successive weeks and while this was satisfactory as far as it went, the emphasis on general goods meant that wagons could not be provided in sufficient quantities for other traffic, including coal.

#### Maize Export Traffic

During the six months since the beginning of March this year, when a start was made with the export of the record maize crop, nearly 400,000 tons, equal to 4,000,000 bags, were moved to the ports by the railways. The highest total for one month was reached in March with 1,057,000 bags of export maize. During the winter months there was a considerable decrease as wagons had to be made available on an increasing scale for the exceedingly heavy seasonal traffic, including coal, citrus and sugar cane. It should now be possible to allocate more wagons for export maize even though sugar cane traffic is likely to remain at a peak until the end of the year.

### WESTERN AUSTRALIA

#### Names for Diesels

Names of aboriginal tribes of Western Australia are being bestowed on the 48 main line 1,105 h.p. 2-Do-2 diesel electric locomotives now being

delivered from Metropolitan-Vickers-Beyer Peacock & Co. Ltd. At the end of August eight of the locomotives, classified "X," were in service, Nos. 1001-1008 inclusive, bearing the names *Yalagonga, Bibbulmin, Ditu-Wonga, Kadjerden, Meananger, Nangamarda, Natingaro, and Warrangoo.*

The remaining forty names selected are as follows: *Arnga, Arawodi, Balgua, Ballardong, Boonara, Churoro, Cheangwa, Djukin, Ewenyoon, Inpirra, Ingarra, Jargurdi, Jarroo, Kardagur, Keriera, Kogara, Loonga, Mangala, Marangal, Meeraman, Muliarra, Mooroon, Niligara, Noala, Pedong, Pardoo, Targari, Tenma, Unambal, Ungarinyin, Wanbiri, Warienga, Weedookarri, Wirngir, Wolmeri, Wurara, Yabaroo, Yawera, Yeithi, and Yindi.* The names were chosen for their historical significance and euphony.

### CANADA

#### Toronto-Montreal Freight Rates

Considerable reductions in freight rates between Toronto and Montreal took effect on September 21. Road hauliers have said that they will be unable to cut their rates to the same extent though they will try to reduce them on a restricted scale.

The Toronto-Montreal traffic is among the most lucrative in the country as it consists largely of high-valued goods normally rated high. One of the rail services to which the reductions apply is that in which railway-owned road trailers are carried on flat wagons between the two towns, providing a direct transit from consignor to receiver.

### UNITED STATES

#### Remodelling a Northern Pacific Bridge

Two new requirements have entailed the expenditure of \$4,500,000 on the Northern Pacific Railway bridge over the Columbia River at Pasco, Washington State. They were the raising of the water level in the river by the construction of the McNary Dam, and the demand for a 300-ft. navigation channel opening in place of the two swing-span openings of about 100 ft. each in the existing bridge, built in 1888.

The work included raising the whole bridge by 4 ft., the substitution of a 307-ft. vertical lift span, with a 70-ft. headway when raised, for the old 237-ft. swing span, and the building of ten new concrete piers and abutments on the old centre line but about 40 ft. longitudinally farther back to enable the old fixed spans—six of them 250 ft. in length—to be moved outwards and so provide room for the longer navigation span. The two new piers one on each side of the navigation channel carry the hoist

#### Suburban Electric Working in New Zealand



English Electric-built multiple-unit electric train on the Wellington-Taita service, New Zealand Railways

towers housing the electric motors, sheaves and counterweights for lifting the new span.

This span was assembled on falsework on the river bank in such a position that barges partly-filled with water could be floated in under it. The water was then pumped out, enabling the barges to rise and lift the span clear of the falsework; it was thus floated to site and moved into position one end at a time.

The old span had in the meantime been floated away. The changing of the spans took 6 hr., and another six were spent in securing the span and completing rail and electrical connections. The river was closed to navigation and the railway to traffic throughout the 12-hr. period.

## SWITZERLAND

### Consumption of Electric Current

A note in a recent issue of the monthly *Bulletin* of the Federal Railways, urging on the staff the utmost reasonable economies in the use of electric current, gave some interesting figures of the annual consumption of current by the national system, which reaches a total of about 600,000,000 kWh. Of this amount, 480,000,000 kWh is provided by the Federal Railways hydro-electric power-stations, and the

remainder is purchased from outside, at a cost of about fr. 6,000,000.

No less than 43,000,000 kWh, or 7.5 per cent of the total consumption, is needed for train-heating in winter; this amount is equal to about 70 per cent of the total production of the Ritom power station on the Gotthard line. On a line over which the gradients are mainly in favour of the trains, such as that from St. Gall to Zurich, the current consumption for train-heating in winter is greater than that required for traction.

## WESTERN GERMANY

### Reversible Working at Frankfurt

The double-track Niederräder bridge at Frankfurt long formed a particularly troublesome bottleneck, as from the north five routes with seven tracks, and from the south two with three tracks, come together there and all traffic has to pass over the two lines on the structure.

As there are about 400 trains across it daily, relief had become essential. The original two mechanical and one power signalbox have been replaced by one modern all-relay box with marked effect on the working. The approach lines now have automatic signalling, with much shorter sections, and on the bridge itself reversible line working has been introduced. Cir-

cumstances are such that the facility is made use of some 60 times daily, particularly by passenger trains. Trains can leave the northern (ordinary passenger) and southern (express) sides of the station together. Formerly the ordinary train would be stopped at Niederräder Station home signal, but now can run to the platform and find the express has cleared the section ahead by the time departure is due. These changes have brought not only greatly increased efficiency but a considerable reduction in operating staff.

## FRANCE

### Machine for Unscrewing Bogie Nuts

On one type of passenger coach maintained at Rennes Workshops, considerable difficulty was experienced in unscrewing the 40 mm. nuts on the suspension rods of the helical springs, because of their rusting. Two workmen at the depot have designed a machine to overcome this difficulty. It consists of a box spanner connected through a worm reduction gear to an adapted boring machine which is operated pneumatically. The reduction between the worm and pinion gear is 29 to 1, and no difficulty has been found in loosening the most obstinate nut. The spanner is pressed on to the nut by a lever which is worked by the operator.

## Publications Received

*Great North of Scotland Railway, 1854-1954.* Edited and published by the Stephenson Locomotive Society, and obtainable from T. P. Hally-Brown, 29, Waterloo Street, Glasgow, C.2. 8½ in. × 5½ in. 44 pp. Illustrated. Paper covers. Price 3s. 6d.—This centenary review of the Great North of Scotland Railway has been produced as the September issue of the *Journal of the Stephenson Locomotive Society*, and the page numbers carry on from the August issue. A chronology of the chief events in the history of the railway is followed by sections dealing with train services, engineering works, locomotives, rolling stock, tickets, and road services. Although much of the information is necessarily in a rather condensed form, a wealth of detail about this small but highly individualistic system has been assembled. Emphasis is laid on locomotives and rolling stock of various periods in the numerous illustrations.

*Anuario de Ferrocarriles y Transportes Regulares por Carretera 1950-1953.* (Railway and Road Services Year Book); 586 pages, 8½ in. × 6 in. Published by the Instituto del Transporte (publication No. 72), under the direction of Dr. Alfonso Imedio Diaz. Plaza de las Cortes 3, Madrid. Price 100 pesetas.—This well-printed year book is of special interest to all concerned with the railway or road transport services of Spain or Portugal.

There is a complete list of the principal officers and their departmental subordinates of the various Ministries concerned in any way with such matters in Spain and those of the National Railways, the private railways and road transport undertakings, with similar particulars for the French, Portuguese and German railway systems and a number of related companies, associations, societies, etc., such as the Wagons-Lits Company, commerce, and so on. The urban underground lines and tramways also are included. These are followed by a number of tables, a review of legislation affecting transport in Spain since January, 1950, a bibliography of transport journals and other publications covering many countries and a 56-page index.

*French Tourist Resorts 1955.*—London: French Railways Limited, 178, Piccadilly, W.1. 10½ in. × 8 in. 328 pp. Paper covers. No price stated. This comprehensive list is divided into four parts: seaside resorts, mountain resorts, spas and art, pilgrimage and tourist centres; each part has its index denoted by a particular colour. For each resort a skeleton map is provided showing its distance and railway journey time from Paris. Full details of amenities are given for each locality, also a list of hotels and their prices except in the case of larger places where a great variety of hotels is available. Each of the four parts is followed by a list of "other resorts," less known, for which

it is not possible to give full particulars. For French National Railways train information and that concerning associated bus and motorcoach services, reference is made to the several current timetables published for internal and for international train services connecting with the S.N.C.F.

*The Golden Arrow.* By Alan Anderson, Leicester: Brockhampton Press. 5½ in. × 3 in. 64 pp. Illustrated. Price 2s.—This booklet is one of a series describing famous British expresses and their routes, also many other railway matters connected therewith. Apart from a few minor errors, the description of the through journey from Victoria to Paris Nord is excellent, with its many references to British and French motive power, signalling, and so on, and to the Channel crossing. The photographic illustrations are well chosen, and there are pictorial route maps and gradient profiles of both the London to Folkestone and the Calais to Paris lines—an excellent pocket companion for the traveller to Paris.

*Talyllyn Railway Calendar for 1955.*—The Talyllyn Railway Calendar for 1955, which is now available, consists of six sheets, two months on each. Each sheet is headed by a new reproduction of a scene on the railway. Copies, price 2s. post free, can be obtained from Mr. R. K. Cope, Brynglas, Beckman Road, Pedmore, Stourbridge.

## Lodging Turns on European Railways

*Generally agreed as essential for economic operation*

*(By a correspondent)*

ONLY the disputes in recent years between the British Railways and the trade unions and the resulting inconvenience to railway users have led most of the travelling public in Great Britain to realise what is meant by lodging turns. The working of lodging turns is not peculiar to this country; on most railways in the world turns are worked to a greater or less extent.

On British Railways the incidence of lodging turns for engine crews has been much reduced in comparison with pre-war, and at present only a small proportion of engine crews are affected by them, whilst no man is likely, on the average, to have to lodge away from home more frequently than once in 10—14 days. Of all turns worked by drivers and firemen on British Railways, it is unlikely that more than 1 in 100 are lodging turns, though this average differs from Region to Region; the proportion of lodging to total turns is greatest in the Scottish and London Midland and least in the Eastern, North Eastern, and Southern Regions; in the last-named Region no turns are worked.

Besides the mileage rate of pay for enginemmen working long distances from their home stations, there is a special lodging allowance, details of which have been published from time to time, whilst accommodation and food at nominal rates are generally provided in railway hostels; where such facilities do not exist extra expenses can be claimed.

In Continental Europe there is in most countries a system basically very similar, though differing in detail. On the French National Railways, main-line engine crews are called upon to work lodging turns, the frequency of such turns being once or twice in every ten days. An allowance over and above normal pay is made covering the total time away from the home station, the rate per hour going up as the time away increases, with an additional payment for night hours. Thus a man away for exactly 24 hr. would receive some 700 francs (14s.). Free accommodation generally is provided in railway hostels, but staff must make their own arrangements as to food; meals can be purchased cheaply at railway canteens.

On the Belgian National Railways only about one per cent of drivers and firemen is liable to work lodging turns, and no one is likely to have to undertake, on the average, more than three such turns per fortnight. Belgium is small in area, and long-distance runs are rare and normally confined to international trains; there is, therefore, little need for lodging turns. For rostered turns there is an allowance of 2.50 Belgian francs (4½d.) an hour based on the total time on duty; where staff are required to lodge away from home without prior notice the rate is a little higher. At most depots, hostels are

available and engine crews are accommodated in these free of charge. If such facilities are not available, the railway provides alternative accommodation at its own cost. Men must make their own meal arrangements.

### Heavy Incidence in Sweden

The position is different in Sweden, where most drivers and firemen, except those on shunting duties, are liable to be called upon to work lodging turns; engine crews expect to be lodging away from their home depots on an average of one day in every five. The Swedish State Railways make a standard supplementary payment of 31 öre (about 5d.) an hour to all enginemmen covering the total time away from their home station whether they are lodging overnight or not. The State Railways accept the responsibility for providing free accommodation for personnel lodging away.

This is normally in railway-owned premises, but occasionally private rooms may be rented. As far as possible the accommodation is so divided up as to enable single rooms to be allocated, these being equipped with beds and bedding, writing tables, chairs and, what is perhaps a necessity, alarm clocks; shower baths and other toilet facilities are provided. Although staff are expected to make their own arrangements as to food, stoves and fuel are provided to enable food to be cooked or re-heated; other amenities such as radio and reading rooms, are frequently provided. In the north of Sweden particularly, the countryside is very sparsely populated and towns are few and far between; it is, therefore, desirable for the State Railways to provide special amenities.

In Norway some 30-40 per cent of enginemmen may be required to work lodging turns; on the average, engine crews lodge away from home on two nights a week. Supplementary payment is made for lodging turns; where staff are signed off at a depot other than their home station, they are credited with a proportion of the lodging time and paid at normal rates of pay for that proportion. It is usual to provide free lodging accommodation and, in this case, each hour of lodging generally ranks as one quarter hour of working time. Where free accommodation cannot be provided, the ratio is considerably higher. Again free cooking facilities are provided, although the employees provide their own food.

Lodging turns on the Italian State Railways are worked by approximately one-third of locomotive crews, each member undertaking, on the average, two turns a week. Free lodging accommodation is provided, generally in railway-owned hostels, and an "away from home allowance" is paid for every absence from home station exceeding

6 hr. There is also an overnight allowance for staff absent from their home depot during certain night hours. In accordance with the usual practice on the Continent, men provide their own food or use railway canteens at their own expense; cooking facilities are provided in railway hostels.

### German Federal Railway Practice

On the German Federal Railway engine crews work, on the average, one lodging turn a week, approximately two-thirds of these grades being affected. Flat-rate allowances are paid for nights spent away from home. Where free lodging accommodation is provided by the railway—and this is usually the case—the rate is DM. 2.40 (4s. 1d.) a night, and where personnel have to make their own arrangements the rate is DM. 4.80 a night. Food must be provided by the employee or meals purchased in staff canteens; hot water is generally provided for hot drinks.

In the case of the Spanish National Railways no special payment is made for nights spent away from home by engine drivers and firemen when free accommodation is provided in railway hostels, but a meal allowance is paid to all engine crews away from their home station whether lodging occurs or not. The scale payments under this head amount to 1.25 pesetas (2½d.) an hour for drivers and one peseta (2d.) an hour for firemen or assistant drivers, covering total time away from the home station. When free lodging accommodation cannot be provided a flat rate payment per night is made of 7.50 pesetas (1s. 3d.) for drivers and 6.50 pesetas (1s. 1d.) for firemen and assistant drivers. Some 40 per cent of locomotive crews are liable to work lodging turns and the average frequency is two or three times a week. The provision of food is the responsibility of the men, but they are allowed to use station refreshment and dining rooms at a cost considerably less than that to the general public.

### Lodging Turns Popular in U.S.A.

The review above has been confined to Europe, as conditions in Continental Europe are, in general, comparable with those in Great Britain. Lodging turns, for example, are widely worked in North America, but no additional allowance is made to engine crews working such turns, and it is by no means the universal practice to provide free accommodation. Sometimes the railway may supply free accommodation, but in others the employee may have to pay part or all of the cost of the night's lodging. Despite this, crews are anxious to undertake the turns which normally go to the senior men; they are remunerative because of the high mileage rate paid.



## Southern Region Electric Locomotive Working

*Boat trains and goods services in typical 24-hr. duty*

*(From a correspondent)*

THE first main-line express in Great Britain to be worked regularly by electric locomotives was the Newhaven boat train of the Southern Region. Although the branch from Southerham Junction, Lewes, to Newhaven and Seaford was electrified in 1935, boat trains continued to be worked by steam until, in 1948, the spur from Newhaven Harbour Station to the quayside platform was equipped with the third rail. Since then the principal boat train service has been worked normally by one of the three Southern Region Co-Co electric locomotives, although reliefs are steam-hauled, or on occasions formed of main-line multiple-unit sets.

Because of the third rail 660-V. supply and the gaps to be negotiated at points and crossings, particularly at some of the complex junctions in the London suburban area, the locomotives are equipped with two motor-generator sets having flywheels to maintain the input to the traction motors during such interruptions. The principle of operation was fully described in *The Railway Gazette* of March 25, 1949, but it may be recalled here that control is effected by varying the booster set output so as first to oppose and then to assist the line voltage, the resultant voltage being applied to each group of three traction motors. This regulation is carried out in the generator field circuits so that there are no starting resistances in the traction motor circuits and all the 26 controller notches may be used for continuous running if required. Three weak-field steps are also available.

Besides the normal protection of the traction motor circuits by overload relays, equipment associated with each booster set automatically switches in a limiting resistance in case of excessive current.

### Daily Mileage

By courtesy of Mr. T. E. Chrimes, Motive Power Superintendent of the Southern Region, the writer was able to accompany locomotive No. 20002 on a recent journey from Victoria to Newhaven with the morning boat train. This trip was part of the busy 24-hr. duty shown below, which exemplifies the way in which advantage is taken of the flexible operating characteristics of these locomotives to allot them a variety of workings so that they are kept on the road continuously.

#### Typical Electric Locomotive Detail

12.9 a.m. goods, New Cross Gate to Lewes  
3.0 a.m. goods, Lewes to Three Bridges  
4.5 a.m. run light to Newhaven Harbour  
6.20 a.m. boat train, Newhaven Harbour to Victoria  
9.31 a.m. boat train, Victoria to Newhaven Harbour  
11.38 a.m. run light to Three Bridges  
2.38 p.m. goods to Lewes  
3.25 p.m. run light to Newhaven Harbour  
5.15 p.m. boat train, Newhaven Harbour to Victoria  
8.20 p.m. boat train, Victoria to Newhaven Harbour  
9.57 p.m. run light to New Cross Gate

The daily mileage involved in this typical working is approximately 372. It applies in the summer service when there are day and night sailings on the Newhaven-Dieppe route. In addition to passenger work on the boat trains, the electric locomotives also haul some of the through trains to and from the Midlands and North between the South Coast resorts and Redhill.

Each locomotive is allotted a 6-hr. period in the shed for routine maintenance once a fortnight. There is an inspection every 85,000 miles, and a general overhaul at intervals of 170,000 miles.

### Performance on Newhaven Service

On the occasion of the writer's journey the load on the 9.31 boat train was 12 vehicles and two vans, or 427 tons. Notching up on leaving Victoria was rapid, the controller being advanced to the final full-field notch with only the briefest of pauses on intermediate steps. The average current during this smart acceleration, which had brought the train up to 20 m.p.h. by Grosvenor Bridge, remained below the normal permitted maximum of 750 amp.

Speed was limited through the suburban area by alternately running on full power and coasting; in fact, there was no continuous running on the intermediate notches at any part of the journey. The driving procedure was therefore similar to that for handling a multiple-unit train, except, of course, that acceleration is not automatic. There is a separate ammeter for each group of traction motors, and the driver must watch these not only to avoid overloading the equipment, but to detect slipping by a difference between their readings.

A double yellow was sighted at Clapham Junction, but clear signals followed and shortly after passing the junction at Balham the driver went into weak field, the practice being to do so at 40 m.p.h., provided there is a clear road. In this locomotive (as in No. 20001) the weak-field notches are selected by a separate lever, which returns automatically to full field when the main handwheel is notched back to zero.

After leaving the suburban restricted area at South Croydon the controller was left on notch 26 and the train gathered speed up the 1 in 264 with an ease which gave no impression of tackling an adverse gradient. Running down from Merstham the maximum was around 77 m.p.h. and the riding in the cab would have been considered creditable in the passenger compartments of some motor coaches when at the head of a train. Some years ago a report to a meeting of the International Railway Congress Association remarked on the

fact that the Southern Region locomotives have axle-hung motors although required to run at 75 m.p.h. and upwards in the course of their normal duties. On the day after the run now described, the writer travelled in a Continental electric locomotive with a flexible drive and no marked improvement in stability or absence of lateral shocks could be detected, although admittedly speeds were higher. Without entering into the question of the effect of motor suspension on the track, which incidentally has been thoroughly investigated in this country using both Continental and British designs of flexible transmission, it can at least be said fairly that the combination in the Southern Region locomotives of axle-hung motors and the Bulleid segmental bogie pivoting system has produced a machine with excellent riding characteristics.

A signal check brought the train to a stand near Gatwick airport. The restart was on a gradient of 1 in 334, but once the train was on the move it was again possible to notch up rapidly without a trace of wheelspin in spite of the heavy rain which had persisted for most of the journey.

### Time Recovery

There was a permanent way check approaching Haywards Heath, and the train was 3 min. behind schedule on passing Keymer Junction. Quick recovery after the slacks here and at Lewes enabled the final 15.5 miles to be run in 20 min. so that the train ran into the boat train platform at the public booked time of 10.44. Details have been published elsewhere of a journey on which one of these locomotives with 420 tons took only 21 min. 40 sec. from passing Keymer Junction to Newhaven Harbour despite a 2-min. stand at signals at Newhaven Town.

The boat train booking of 50 min. from Victoria to Keymer Junction is 3 min. longer than the allowance for multiple-unit trains on Brighton non-stop runs. This is not a large difference when it is considered that a 12-car multiple-unit train has 16 axles motored while the electric locomotive has only six. Since electric traction was introduced the average boat train timing has been reduced by 6 or 8 min. compared with steam schedules.

Difficult conditions occur for the electric locomotives when checks are experienced close to lengthy gaps in the conductor rail, especially at the foot of gradients. In such circumstances maximum demand on the boosters occurs when they have been running on fly-wheel only. Realignment to enable restrictions to be eased has been carried out where possible at situations of this type.

## Valenciennes-Thionville Electrification

*S.N.C.F. 50-cycle project now in operation  
between Valenciennes and Charleville*

**E**LECTRIC locomotives began trial running on the first section of the S.N.C.F. Valenciennes-Thionville electrification in July, and the formal opening of this stage, from Valenciennes to Charleville (109 miles), took place on August 5. The line is electrified with single-phase a.c. at 25 kV., 50 cycles. On the section now operating there are substations at Valenciennes, Fourmies, and Mohon, close to or associated with substations of Electricité de France. The spacing of substations throughout varies between 37 and 50 miles.

### Power Supplies

At Valenciennes two 10,000 kVA., 45/25 kV., transformers, one for stand-by purposes, are housed in the E.D.F. substation. The Fourmies installation consists of a Scott-connected group of two 60 kV./25 kV. transformers, each feeding in a different direction and with

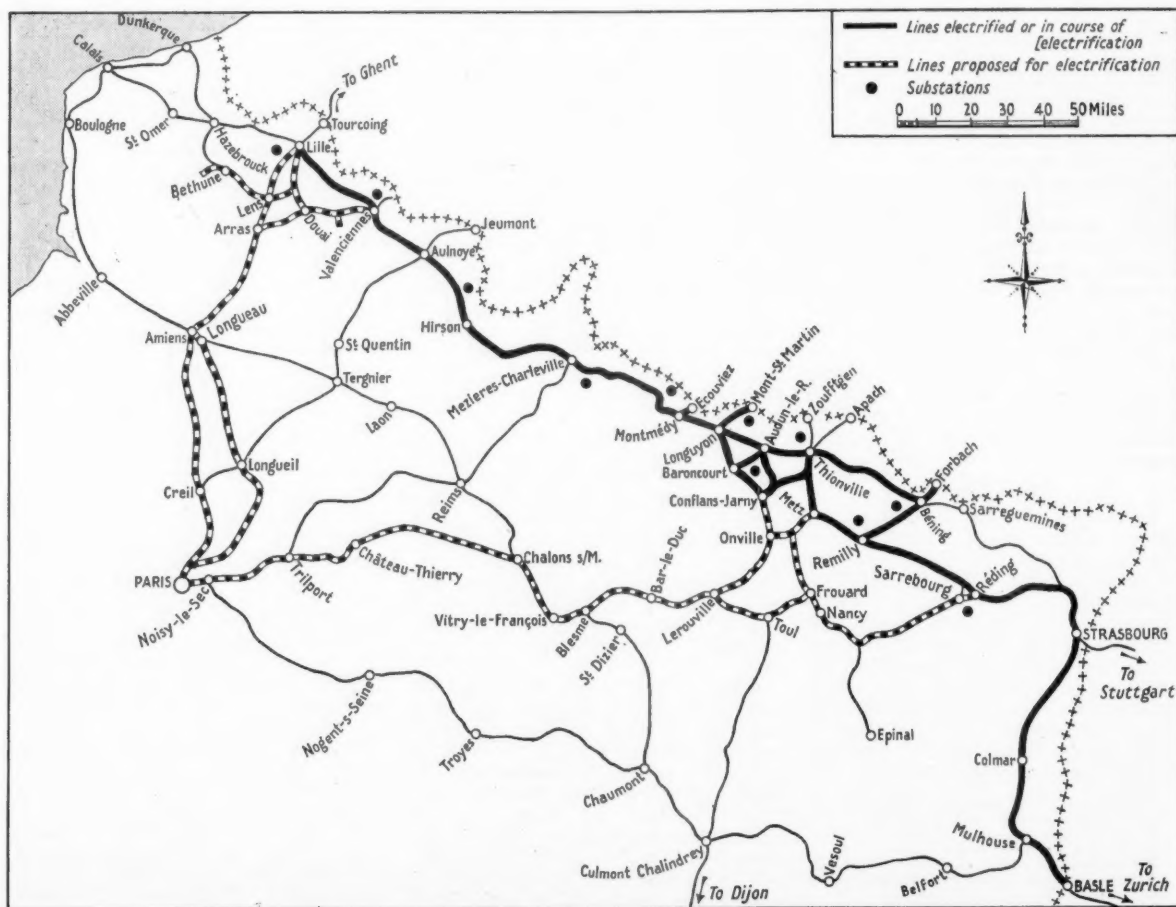
their currents 90 deg. out of phase. A neutral section in the overhead system adjacent to the substation is of sufficient length to prevent the two out-of-phase sections being interconnected by the pantographs of a locomotive. At Mohon the arrangements are similar, and here, as at Valenciennes the railway supply transformers are in an E.D.F. substation. Neutral sections of the overhead system can be bridged if it is necessary to connect two normally separated lengths of contact line to the same feed.

At cabins approximately half-way between substations provision is made for parallel or individual substation supply, and for paralleling the contact lines. Subsidiary cabins between these points and the substations have contact line paralleling facilities. Further sectioning points are provided on long sections, or where gradients cause lengthy occu-

pation by trains. All switchgear is arranged for remote supervisory control.

The overhead system consists of a bronze carrier of 0.1 sq. in. cross section and a grooved copper contact wire with a cross section of 0.17 sq. in. Supports are normally placed 7 ft. 2½ in. from the rail in order to permit good visibility of signals on curves, and where this distance is reduced for any reason it is never less than 5 ft. 11 in.

On the section now electrified there are several long stretches at 1 in 100 against eastbound trains, and one length of nearly two miles at 1 in 87. Some particulars of the types of traffic handled and the tonnages of the freight trains which form its major part were given in our issue of March 19, 1953. The locomotives now in service are prototypes of three of the designs of which general details were given in the same article. Two of them are of

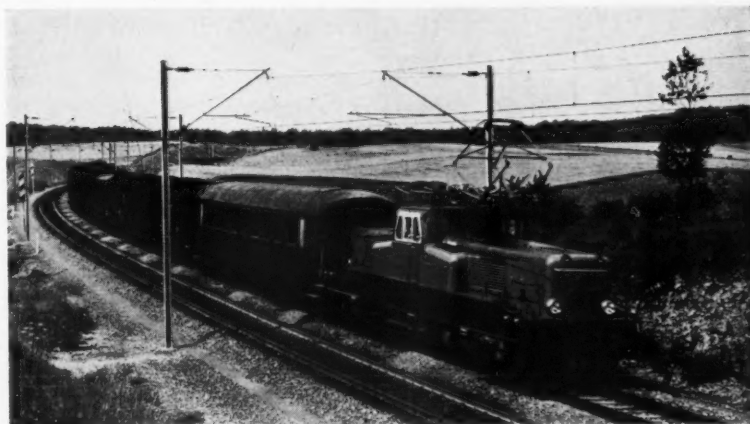


Existing and projected electrification at 50-cycles in northern and eastern France

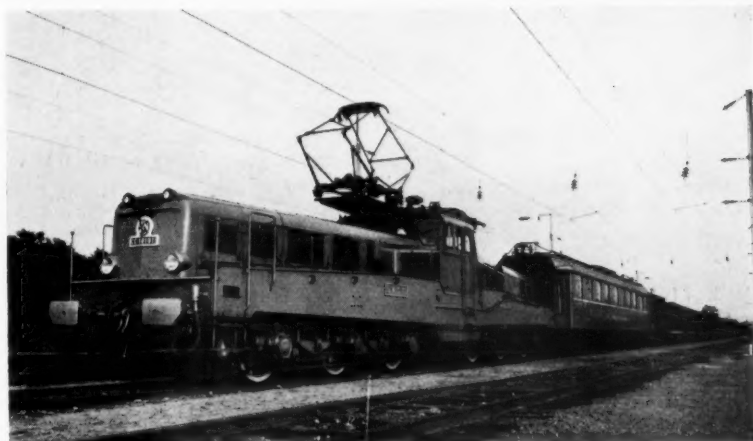
the Bo-Bo type, weighing 80 metric tons, one of which, 13001, belongs to a series of 24 now under construction with Jeumont 50-cycle traction motors. Delivered on July 13, it had covered up to September 10 last a total distance of 19,871 miles hauling trains of an average weight of 685 metric tons, but which frequently attained as much as 900 tons, thereby exceeding the calculated performance.

The other Bo-Bo, 12001, is equipped with ignitron mercury vapour rectifiers and Schneider-Westinghouse traction motors and is the first of a series of 14 under construction.

Delivered on July 17, the locomotive had covered up to September 10 last a total distance of 17,833 miles hauling trains of an average weight of 675 metric tons, but which frequently attained or exceeded 1,000 metric tons. It has been found possible to start trains of 1,200



*Bo-Bo locomotive with 50-cycle traction motors hauling a 1,000-ton freight train*



*Co-Co locomotive with single-phase/d.c. rotary converter heading a freight train of 1,800 tons*

metric tons easily on a rising gradient with this locomotive, a performance which would be extremely hard to attain with other types of traction of similar weight.

The electrical equipment of both locomotives was built by the Société le Matériel de Traction Electrique, and the mechanical parts by the Société des Forges et Ateliers du Creusot. In both designs the controller is operated by a mechanical drive from the driver's hand-wheel and actuates tapping switches on the high-tension side of the transformer, where the current is lower.

#### Heavy Goods Locomotives

The third prototype is a Co-Co locomotive, 14101, weighing 120 metric tons, designed to haul the very heavy goods trains which are an essential feature of traffic on this line, and is the first of a series of 102 being built by the Société Alstom. Delivered on July 29 it had covered up to September 10 last a total distance of 13,390 miles hauling trains of an average weight of 1,380 metric tons, but which frequently attained

1,800 metric tons. Many starting tests on rising gradients have demonstrated that the capabilities of this locomotive for hauling very heavy goods trains exceed anything previously achieved on the French National Railways. In this design the single-phase a.c. is converted to d.c. by rotary machines. Regenerative braking is available.

More locomotives identical with these prototypes are now being received from the builders, and deliveries will be accelerated during the present autumn to achieve a rate of seven or eight a month by the beginning of 1955. A further series of 20 Co-Co locomotives is now being built by the Société Oerlikon and deliveries are expected to begin early next year. These are of the single-phase/three-phase type, with squirrel cage traction motors, and control by means of a frequency changer driven by a d.c. motor permitting continuously variable speed.



*Bo-Bo locomotive with ignitron rectifiers*



## Electric Train Operation in Switzerland

*New driving trailers constructed to form duo-directional trains with modern motor coaches and carriages*

THE Swiss Federal Railways have been operating passenger trains hauled by motor coaches and this principle is being extended.

The Bellinzona-Locarno branch services were the first to be so worked, a double-bogie four-motor 1,600 h.p. (one-hour) motor coach being used to haul as many ordinary coaches as needed. Two of these motor coaches and trains have been handling 19 of the daily 20 return services between those two towns, one set making 287 miles a day and the other

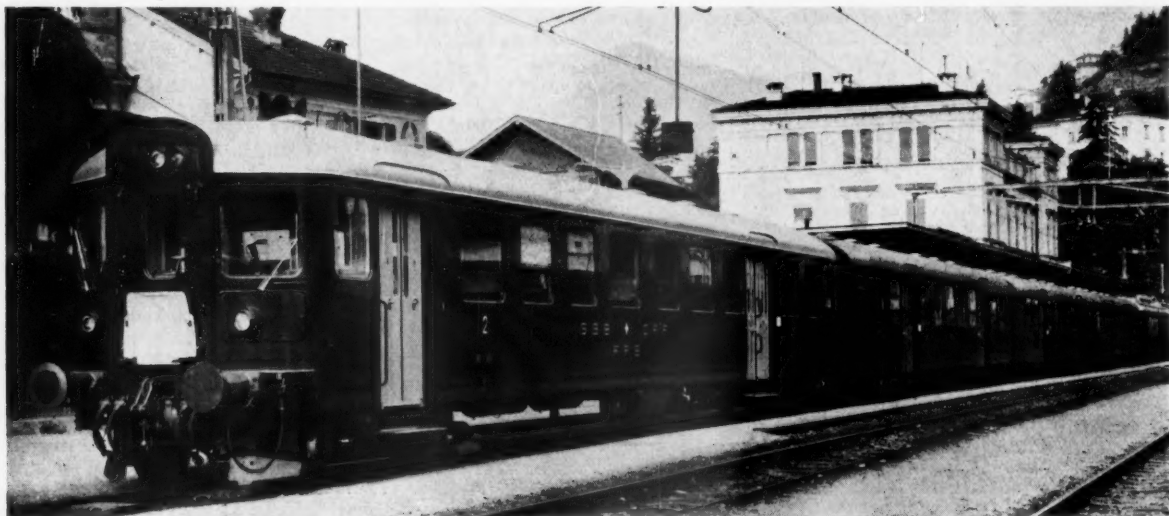
232, with an average distance between stops of 1.85 miles and high point-to-point running speeds.

### First Developments

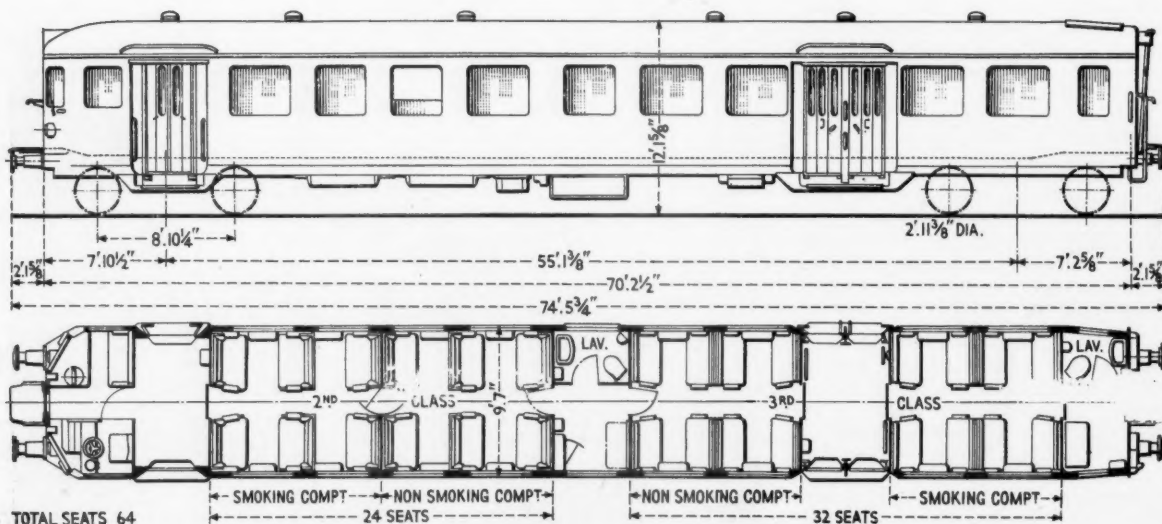
The first development from this stage was to order six control trailers from Schindler Waggon S.A., but another 14 were later ordered from the same builder. One of these is attached to the other end of the train to obviate the motor coach having to run round at each terminal point. As in the earlier

practice, ordinary passenger carriages are used as the intermediate trailers, but they now carry the control wiring and couplers, so that fixed-formation trains and spare selected carriages are kept at each terminal point.

As a rule, these trailers are of the modern lightweight steel stock. Normal trains have been made up of a motor coach, a second and third class composite, three third class coaches, and a control trailer giving a seating capacity of 48 second class and 364 third class.



*Control trailer end of a five-coach electric train on the Bellinzona-Locarno line*



*Diagram showing principal dimensions and seating arrangements*

The 28 modern motor coaches of 55 tons weight and 13,500 lb. one-hour tractive effort at 46½ m.p.h. were described already, in the January 23, 1953, issue of *The Railway Gazette*. As usual, the Swiss Federal Railways themselves acted as main contractor, though the mechanical portions were built by, and the complete mechanical and electrical erection undertaken at the factory of the Swiss Locomotive Works. The electrical equipment was made by three different firms.

A driving position is placed at only one end of the control trailer, which is a double-bogie vehicle 70 ft. long over headstocks, following the pattern of all modern S.B.B. lightweight all-steel coaches. The motor coach carries all the luggage and parcels space deemed necessary for the trains, and the control trailer has second and third class seating, 24 seconds and 32 thirds, half of each class being non-smoking; additionally there are eight hinged wooden seats in the vestibules. These vehicles are classified as BCT4ü and weigh 29 tons, almost the same as the standard carriage, and equal to 1,020 lb. a seat.

#### Mechanical Requirements

In their mechanical requirements these trailers had to comply with the normal S.B.B. specification and be capable of easy riding up to 77 m.p.h., traverse curves of 575 ft. radius at 37 m.p.h., withstand a buffing load of 200 tons, and an equally distributed vertical load of 15



*Driving compartment of the control trailer*

tons. The side and roof plates are 1.5 and 2 mm. thick, of special steel having a tensile strength of 23 tons per sq. in. and an elongation of 25 per cent.

The profiles of the body framing vary from 3 to 5 mm. in thickness; and the whole roof, underframing and sides were arc welded in box-form at the Schindler Pratteln works. Bogies are of the well-

known Swiss type with welded frames and without axlebox guides of the conventional form, and the dimensions of bogie wheelbase, bogie pitch and length over headstocks are those standardised for many years. The outer bogie, beneath the driving compartment, carries the automatic train control shoe and equipment.

### Double Heading on the Manchester-Sheffield Electrified Line



*Liverpool Central to Harwich Parkeston Quay train near Deepcar, hauled by Co+Co and Bo-Bo locomotives*





5 and 6, south of which alterations were made enabling them to converge to a new fast-running junction and their trains to proceed as hitherto to Finchley Road on the one track. This permitted the previous southbound fast line to be used independently by Bakerloo trains and the previous southbound local to become the Bakerloo northbound. The new tracks were laid with 95-lb. b.h. rail with machined joints and 150-lb. f.b. conductor rail with high-speed ramps.

Not only had the bridge mentioned to be widened but the car shed layout north of the station had to be rearranged, the tracks being reduced from seven to five and the fanway of lines rearranged. The sheds were out of commission for six weeks. This work formed Stage 2.

The first main changeover followed this work and made three independent southbound tracks available to just south of the station, instead of two, with recommissioned and smaller car sheds. The third stage merely involved slewing the existing reversing siding, enabling the fourth to be undertaken and the installation of the new northbound Bakerloo, part of which was formed from the now redundant southbound local, the remainder being new track. Before that, however, the formation under the position of the new track was recut by mechanical excavator and a new drainage system provided.

The final changeover followed Stage 4. It involved the slewing at each end of the track prepared for the new northbound Bakerloo and its connection to the existing tracks at Stanmore Junction and immediately north of the station. Work was restricted to a minimum, so that the major portion of this possession could be devoted to testing the new signalling; the old junction work was left to be removed later. Bakerloo trains now travel to and from the Stanmore line by the fly-under junction free of all interference.

These arrangements have permitted removal of a number of crossover connections at both ends of the station, but principally at the south, formerly considered necessary to give sufficient freedom of movement, with consequent simplification in the signalling, reducing the number of levers in the frame and allowing it to be shortened as described below. The connection to the sheds of course remains, with those leading to the Neasden depot lines. The centre one of these forms a fly-under to and from the northbound local line. The siding, with its connections, north of platform faces 3 and 4 also remains. As the accompanying diagram shows, there are now very few crossovers.

#### New Signalling Equipment

These changes, of course, necessitated the re-signalling of the area, controlled formerly from a signal box at the northern end of platform 2/3. This had a 95-lever power frame, with electric interlocking, installed by the former



*View westward before alterations, showing (from left) Bakerloo train on reversing siding and Metropolitan southbound local and fast tracks*

Metropolitan Company. To enable this to be reconditioned and altered to work on the remotely-controlled power-operated lever system, used by London Transport Executive for all new work of this class, a temporary signal box and relay room were erected nearby and the frame then given over to the Signal Engineer's new works staff. It was more economical to do this than to erect a new signal box on another site, which would have occasioned expensive cable alterations and renewals.

The original frame was then shortened to 59 levers, equipped with mechanical locking, air cylinders for actuating the levers under remote control, new circuit closers and other fittings and adapted generally to the new conditions of working. It had been decided to adopt a push button desk of the type first used in November, 1952,

at Ealing Broadway and described in our issue of November 28 of that year, in an article by Mr. R. Dell, Signal Engineer, London Transport Executive, to whom the power-operated lever system and this form of controlling it are due. (Before the Ealing equipment was made the remotely-controlled levers were actuated from other miniature levers, as in the installation at Harrow, described in our issue on June 11, 1948.) Space for the installation of the desk was obtained at the south end of the signal box by the shortening of the frame.

#### Controlled Lever System

In this system, as applied up to the present, a power lever frame of the usual type—except that the levers are not secured in their extreme positions by ordinary catch handles—is provided



*After alteration, showing (from left) Metropolitan fast and local and Bakerloo Stanmore line northbound tracks, reversing siding, and southbound Stanmore and Metropolitan local and fast tracks*



*Push-button control desk, with telephone and train description equipment, in Wembley Park Station signalbox*

and the signalling arranged to be operated from it, using the standard circuits developed with the individual lever working in the course of a long experience on the London Underground lines. Mechanical interlocking is provided. The levers are actuated automatically under the control of circuits, themselves energised by the actions of a signalman located, it may be, some distance away—as in the case of two of the signal boxes in the Harrow installation—or nearby, as circumstances render advisable. The route setting principle is adopted, whereby it is only necessary to operate a single lever or, in these latest installations, a push button, in order to set and lock all the points for a train movement and clear the relevant signal or signals. In addition, pre-setting is provided. After a route has been set and signalled the signalman can, in readiness, actuate another lever or button applying to a conflicting one and such route will be-

come set and signalled immediately conditions, as reflected by the passage of the first train, permit of that taking place in safety.

#### Operating Desk

The desk, containing 47 push buttons, is flanked on the left by the telephone equipment with switchboard, and on the right by the train describer transmitters, everything being within comfortable reach of the signalman seated in the centre, as seen in our illustration. The buttons are of perspex and normally illuminated in red by refracted light. On pressing a button to set up a route this light changes to yellow and then finally to green when the signal clears. The light reverts to red when the train, in entering the track circuit in advance of it, restores the signal automatically to danger as usual. The signal can, however, be restored before this, should circumstances necessitate, by pulling the button. Simi-

larly, a button which has been pressed and is for the moment illuminated in yellow may be pulled to cancel the operation. The operation of the desk thus reduces itself to a simple gesture for each train operation.

Each button is a separate unit readily removable for replacement by undoing two screws and has plug connections. Full track circuiting, with track, approach, and route locking, in association with London Transport system of standard signal and junction indicator aspects, with fog repeaters, is provided.

A key is provided for each line for automatic operation of running signals and when depressed allows those signals to operate as trains pass without the signalman requiring to take any additional action.

The push-button system enables him to carry out his work with greater independence of the time of arrival or departure of trains, leaving him free to attend to telephones and other matters without risk of delaying the service. Telephone messages are handled by microphone and loud speaker leaving the hands free. For an incoming call the signalman merely depresses a key beside the desk and speaks into the microphone, hearing the message over the loud speaker, without any send-receive key. There is a handset as an alternative.

The relay room is of especially neat design; the wiring is arranged in trees in accordance with modern practice. The design of the relay racks is particularly pleasing. The whole of the original wiring was removed and new installed throughout both relay room and operating room. The neoprene rubber-covered wire has glass braid which cannot fail under fire conditions and thus leave bare conductors exposed. The usual very careful precautions against fire have, of course, been taken. A number of the relays used in the subsidiary circuits, as distinct from the signalling circuits proper, are of the telephone type mounted in sealed transparent gas-filled cases.

The push-button apparatus has given such satisfaction since it was introduced two years ago at Ealing that it is being considered for a number of other locations.

#### Supply of Equipment

The whole of the signalling equipment proper was supplied by the Westinghouse Brake & Signal Co. Ltd. and manufactured at their Chippenham Works. The train description apparatus, which here is required to deal with a particularly large number of combinations, was provided by the Siemens & General Electric Railway Signal Co. Ltd.

The work was planned and carried out under the direction of Mr. R. Dell, Signal Engineer, London Transport Executive, whose staff also effected all the reconditioning on site, for the Chief Civil Engineer, Mr. C. E. Dunton. We are indebted to Mr. Dell for facilities to inspect the equipment.

## RAILWAY NEWS SECTION

## PERSONAL

Lady Robertson, wife of Sir Brian Robertson, Chairman, British Transport Commission, has accepted the Presidency of the Railway Convalescent Homes for 1955.

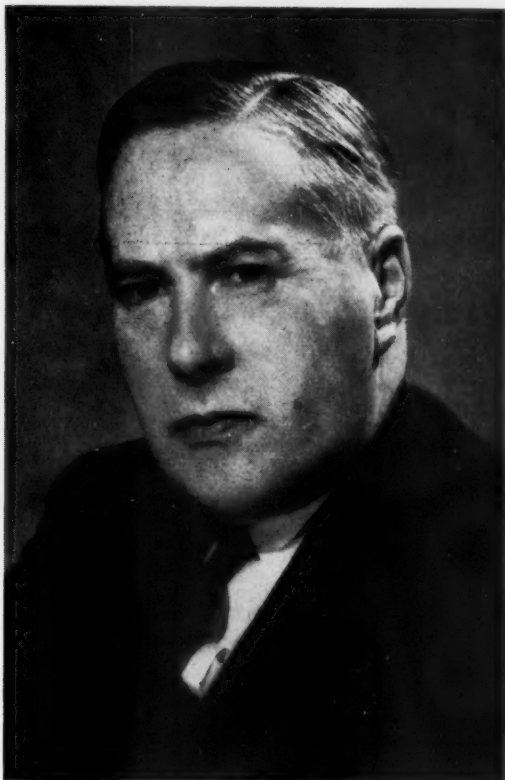
Mr. B. H. Harbour, who, as recorded in our October 22 issue, has accepted the invitation of the Minister of Transport & Civil Aviation, made after consultation with

1942, he was appointed Chairman of London Transport's Postwar Planning Committee. Mr. Harbour is a Member of the Institute of Transport.

Engineer Fernando A. Cerrajería, who has been appointed Administrator General of the General San Martín Railway, Argentina, was born in 1913, at Gualeguay, Province of Entre Ríos. In 1939, he graduated as a civil engineer from the

a member of the Permanent Committee of the Panamerican Railway Council and of the Organizing Committee of the IX Panamerican Railway Congress to be held in Buenos Aires in 1956. He was also President of the special Purchasing Commission which visited Brazil in 1953.

Lord Derwent has been appointed Chairman of the British Road Federation in succession to Lord Sandhurst.



*Mr. B. H. Harbour*

Appointed a full-time Member of the London Transport Executive



*Eng. Fernando A. Cerrajería*

Appointed Administrator General of the General San Martín Railway

the British Transport Commission, to become a full-time Member of the London Transport Executive, is 55. He has been Operating Manager (Country Buses & Coaches) since the beginning of 1946. He joined the staff of the Metropolitan District Railway in 1913. After experience in many departments, he was appointed in 1927, to the statistical office of the Underground group of companies and in 1928, to the office of the Secretary & Treasurer of the group. In 1930, Mr. Harbour became an assistant to Sir Ernest Clark, Financial Director of the Underground group. He became Secretary to Lord Ashfield in 1937, and three years later was appointed an Officer of the London Passenger Transport Board. In 1943, he was appointed Commercial Manager and took up his post as Operating Manager (Country Buses & Coaches) in January, 1946. Between 1939 and 1945, Mr. Harbour was Secretary to the Standing Joint Committee of the main-line railways and the London Passenger Transport Board, set up under the Transport Act of 1933. In

National University of Buenos Aires and joined the National Co-ordination of Transport Board—where he made a special study of road-rail competition—becoming afterwards Chief of the Freight Division and of the General Concession & Permit Inspection Section of the former National Transport Board, as well as being a member of the National Statistics & Census Board, presiding in this capacity over the Transport Committee of the Ministry of Public Works. In 1947, he joined the Federal Intervention in the Province of Córdoba as Under-Secretary of Public Works and President of the Provincial Road Board, later becoming General Manager of the Córdoba Electric Tramway Construction Company and finally being named Provincial Minister of Public Works. Returning to private life, he dedicated himself for a period to different phases of industry, but in 1951, at the request of Engineer J. E. Maggi, Minister of Transport, he became, first, Technical Supervisor, and, later, Administrator General of the General Urquiza Railway. Engineer Cerrajería is

The following administrative changes have occurred in the personnel of the Indian Railway Board, with effect from October 1, 1954:—

Mr. G. Pande, General Manager, Ganga Bridge Project, has been appointed Chairman, Railway Board, and Secretary to the Ministry of Indian Railways.

Mr. P. C. Mukerjee, Mr. K. P. Mushran and Mr. K. B. Mathur, General Managers of the Eastern, Western, and Northern Railways respectively, have been appointed Members of the Board.

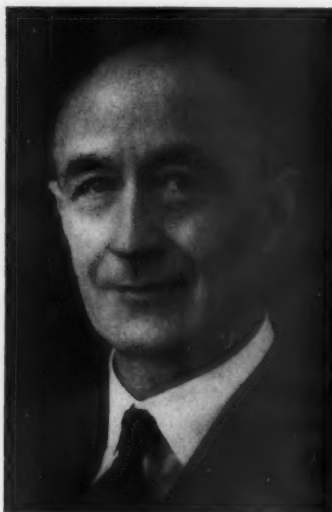
Consequent on the above changes, Mr. H. K. L. Sethi, Director, Civil Engineering, Railway Board, has been appointed General Manager, Ganga Bridge Project; Mr. A. K. Basu, Director, Traffic, Railway Board, becomes General Manager, Eastern Railway; Mr. P. N. Saxena, Director, Establishment, Railway Board, General Manager, Western Railway; and Mr. M. K. Kaul, Senior Deputy General Manager, Northern Railway, General Manager of the same system.





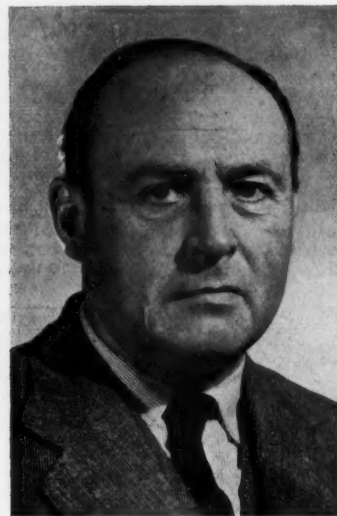
*Mr. S. W. Smart*

Superintendent of Operation,  
Southern Region, 1945-54



*Mr. S. A. Fitch*

Appointed Operating Superintendent,  
Southern Region



*Mr. A. Earley*

Appointed Chief Ports Manager,  
E.A.R. & H.

Mr. S. W. Smart, Superintendent of Operation, Southern Region of British Railways, whose retirement was recorded in our October 22 issue, entered the service of the former L.B. & S.C.R. in 1904 and served in the various sections of the Superintendent of the Line's Office until the grouping of the railways in 1923. He was then appointed Assistant for Rules & Regulations in the Chief Operating Superintendent's Office at Waterloo, and in April, 1925, became Assistant to the London East Divisional Operating Superintendent, and was occupied with Sir Eustace Missenden in connection with the introduction of colour-light signalling and electrification in the London Bridge, Cannon Street and Charing Cross areas. Five years later he was appointed Assistant London Central Divisional Superintendent on the amalgamation of the Operating and Commercial Departments of the Traffic Department. In 1933, Mr. Smart was appointed Assistant for Train Services, and Assistant Superintendent of Operation in 1942, being appointed Superintendent of Operation in 1945. During the war he was particularly concerned with the emergency train service, the evacuation from London, and later the evacuation from the South-East coast to London and other parts of the country. He was closely concerned with the return of the British Army via Dunkirk as the Southern Railway, being the originating railway, provided the contact with the War Office, and also with the day-to-day emergency train services which arose from bomb damage. Mr. Smart's name will always be associated with the development of electrification, beginning with the electrification of the L.B. & S.C.R. Line from London Bridge to Victoria in 1908, and standard services on the Southern, and also with colour-light signalling which is so extensively used on the Southern Region. He was awarded the C.V.O. in the New Year Honours List, 1953; he was awarded the O.B.E. in the New Year Honours List, 1947, and the Coronation medal in 1953. He was given the award of Officer of the Orange Nassau on the occasion of the visit of the Queen of the Netherlands to England in 1950. His other Honours are the Chevalier of the Legion of Honour (March, 1950), and Chevalier of the Order of Dannebrog (May, 1951). Mr. Smart was admitted

to the Freedom of the City of London in October, 1948.

Mr. S. A. Fitch, Assistant Operating Superintendent, London Midland Region, British Railways, who, as recorded in our October 22 issue, succeeds Mr. S. W. Smart as Superintendent of Operation, Southern Region, entered the service of the South Eastern & Chatham Railway in 1911. He saw active service during the 1914-18 war; was awarded the Distinguished Conduct Medal and the Military Medal; and, in 1918, received an Infantry commission. On his return to railway duties he was appointed to the Office of the Superintendent of the Line. From 1924 to 1938, he held various positions with the Southern Railway, including those of Assistant Stationmaster, Victoria; Assistant Agent, Nine Elms; Assistant to London Central Divisional Superintendent, and Assistant Divisional Superintendent, London East, and London West Divisions. He subsequently became General Assistant to the Traffic Manager. When the 1939-45 war broke out he was posted to the Aldershot Command as Railway Liaison Officer, returning to his position of General Assistant to the Traffic Manager after the evacuation from France, and later becoming Acting General Purposes Officer to the General Manager. Mr. Fitch, who had recently been appointed an M.B.E., proceeded again on active service as Deputy-Director (Railways), 21st Army Group, with the rank of Colonel, and for services in North West Europe was appointed an O.B.E. (Mil.). On his return to the Southern Railway in 1945, he was appointed Assistant Superintendent of Operation. In the next year he was one of a party of Southern Railway officers which visited the U.S.A. and Canada to study developments in diesel traction. He became Assistant Operation Superintendent, London Midland Region, in 1949.

Mr. R. G. Smerdon, M.C., has been appointed a Member of the Transport Arbitration Tribunal. He succeeds Mr. W. H. Nevill who has resigned because of ill-health. Mr. Smerdon is a former Assistant Chief General Manager of Lloyd's Bank Limited, and has been a temporary Member of the tribunal since April.

Mr. Andrew Earley, O.B.E., who, as recorded in our October 8 issue, has been appointed Chief Ports Manager, East African Railways & Harbours, has had some 30 years of experience of railways and harbours administration since joining the London & North Eastern Railway in September, 1924. Until recently, he has been Transport Adviser to the United Kingdom High Commission in Germany. During the 1939-45 war, he was commissioned into the Royal Engineers and saw service in the Movements & Transportation branches in France, the United Kingdom, Near and Middle East, India, Italy, and Russia. During this time he held a number of senior Movements & Transportation staff appointments and at one time was responsible for the organisation of Russian Aid Transport through the Persian Gulf ports. For this work he was awarded the Order of Kutuzov by the Soviet Government. He was also awarded the O.B.E. (Military Division) for his war services. In 1945, Mr. Earley joined the European Central Inland Transport Organisation, and, in May, 1946, he became the Director of the Railways Division (Paris) and Chairman of the Inter-Railway Wagon Exchange Commission covering Western and Central Europe. He was subsequently Chief Staff Officer and Director of the Transport Branch of the United Kingdom Control & High Commission in Germany before becoming Transport Adviser.

Mr. R. C. Mosedale, Senior Technical Assistant to the District Engineer, Leeds, North Eastern Region, British Railways, is retiring on October 30, after completing 40 years of railway service. He entered railway employment on November 9, 1914, as Bridge Draughtsman with the Chief Engineer's Department of the former Midland Railway Company at the Derby Headquarters under the Chief Engineer, Mr. Henry Briggs, Senior. On the opening of the Northern Divisional Engineer's Office at Leeds in 1915, he was transferred to that office under Mr. C. B. Trye, Senior, Northern Divisional Engineer (M.R. Company) and received the appointment as L.M. & S.R. Chief Draughtsman at Leeds on September 1, 1928. In 1951, he was appointed Senior Technical Assistant to

the District Engineer, N.E. Region, Leeds, from which position he is now retiring. Mr. Mosedale acted as Resident Engineer on quite a large number of bridge reconstructions and contract works on the former Midland and London Midland and Scottish Railways in the north. He is also an active Fellow and Correspondence Secretary of the Leeds & Bradford Section of the Permanent Way Institution at Leeds.

Mr. Harold Booty has been appointed Assistant to the Sales Promotion Officer in the British Transport Commission's Commercial Advertisement Division. Mr. Booty, who joined the British Travel Association's Research Department after the war, went to America in 1950, as Assistant Manager of the British Travel Centre, New York. During his four-year stay there, he carried out much of the planning in connection with the highly successful 10,000-mile tour of the United States made by three London buses.

General Sir Roy Bucher, K.B.E., C.B., M.C. (India Army, ret'd.), is to be Chairman of the Transport Users Consultative Committee for the Yorkshire Area.

Mr. William G. Findlay, Foreign Freight Agent in Montreal for Canadian Pacific Railway since 1938, has retired after 43 years of service.

Mr. P. G. McLean, General Superintendent of Communications for the Canadian Pacific Railway's Western Lines, has retired after 45 years of service. He has been succeeded by Mr. D. N. Macleod, Superintendent of Communications, Ontario District.

Mr. S. McMahon, General Manager of the Canadian Pacific Express Company at headquarters in Toronto, has been appointed Vice-President & General Manager. Mr. McMahon has also been elected to the board of directors.

Mr. W. J. Hallarn, General Auditor of the company for the past nine years, has been appointed Vice-President & Comptroller.

We regret to record the death, at the age of 57, of Mr. J. Hugh Campbell, Manager of the Canadian Pacific Railway's department of public relations at the Montreal headquarters. As head of the department, the Company's Public Relations Offices in principal cities in Canada, also in New York and London, were responsible to him.

At a meeting of the Managers' Conference held at the Irish Railway Clearing House, Dublin, on October 12, Mr. S. C. Little, General Manager, Sligo, Leitrim & Northern Counties Railway, was unanimously elected Chairman of the conference for 1955.

We regret to record the death on September 29, at the age of 56, of Mr. H. J. Deacon, B.Sc.(Eng.)(Lond.), M.I.Mech.E., M.I.P.E., a member of the general manufacturing department of Standard Telephones & Cables Limited.

Lord Baillieu, Chairman of the Dunlop Rubber Co. Ltd., has sailed for New York to lead a Commonwealth delegation at a world conference of the English Speaking Union. He will visit the Dunlop factory at Buffalo, where a \$5 million modernisation programme has been put in hand.

Mr. F. R. Unwin, M.I.E.E., Manager of the Instrument & Switchgear Department of the General Electric Co. Ltd., is retiring.

He will be succeeded by Mr. J. Lawrence, until recently Assistant District Manager for the North-West area, Manchester. Mr. Lawrence's successor at Manchester is Mr. E. G. Taylor, B.Sc.(Eng.), M.I.E.E.

Mr. E. Waterworth, Chief Buyer for the British Tyre & Rubber Group of companies, has retired after more than 40 years of service.

Mr. Douglas F. Walton, Local Director of Thos. W. Ward Limited, Albion Works, Sheffield, and a Director of Darlington Railway Plant & Foundry Co. Ltd. (a subsidiary company), has been appointed Director of the Ketton Portland Cement Co. Ltd., also a subsidiary of Thos. W. Ward Limited.

The British Thomson-Houston Co. Ltd., states that Mr. J. N. Griffiths is now attached to the Nottingham office at 71-73, Lower Parliament Street, Nottingham (Tel.: Nottingham 43588). Mr. Griffiths, who handles electrical plant and apparatus business, has hitherto been attached to the Sheffield office.

Sir Kenneth Hague, Deputy Chairman & Managing Director of Babcock & Wilcox Limited, has resigned his Chairmanship of the company's associated undertaking, Edwin Danks & Co. (Oldbury) Limited, because of pressure of business. General Sir Kenneth Crawford, K.C.B., M.C., has been appointed a Director of Edwin Danks & Co., in succession to Sir Kenneth Hague.

Mr. L. Brooke Edwards, representative in this country for the Baldwin-Lima-Hamilton Corporation, Philadelphia, U.S.A., has been appointed a Director of the American Chamber of Commerce in London. Mr. Brooke Edwards is also European representative for the International Railway Supply Company. He was for many years representative in India for the Baldwin Locomotive Company.

Mr. W. H. McFadzean, Chairman & Chief Executive of British Insulated Callender's Cables Limited, also becomes Managing Director as from December 1. From the same date, Mr. D. W. Aldridge will be Deputy Chairman; Mr. H. J. Stone, Deputy

Chief Executive, will become General Manager; Mr. W. C. Handley will become Deputy General Manager; Dr. L. G. Brazier, Director of Research, will become Director of Research & Education.

Mr. McFadzean has left this country for New York. While in North America he will visit Canada in connection with B.I.C.C.'s important interests there, which include Philips Electrical Co. (1953) Ltd., of which Mr. McFadzean is Chairman. He will return to this country in early November.

The President of the Board of Trade has appointed Sir Arthur Morse, C.B.E., to be Chairman of the British Travel & Holidays Association from November 1.

Mr. T. A. Crowe, Chief Managing Director of North British Locomotive Co. Ltd., and Mr. G. Collingwood, T.D., Managing Director of Vulcan Foundry Limited, and Chairman of Robert Stephenson & Hawthorns Limited, have joined the board of Rail Traction Supplies Limited.

The Brush Group Limited, announces the following changes:—

Mr. S. Webster, Managing Director of Bryce Berger Limited, to be Deputy Managing Director of the National Gas & Oil Engine Co. Ltd.

Mr. B. D. Giordan, Works Director of Mirrlees, Bickerton & Day Ltd., to be Managing Director of Bryce Berger Limited.

Mr. D. G. Hawkins, General Manager of the National Gas & Oil Engine Co. Ltd., to be Assistant Group Sales Director.

Mr. R. G. Hooker, Works Manager of J. & H. McLaren Limited, to be General Works Manager & Director of Brush Electrical Engineering Co. Ltd.

Mr. B. R. Cant, Personal Assistant to the Group Managing Director to be Works Manager of J. & H. McLaren Limited.

Mr. H. A. Short, Chief Regional Manager British Railways, North Eastern Region, at a ceremony in York, on October 18, presented a pair of binoculars to Mr. J. E. Richardson on his retirement from the post of District Commercial Superintendent, York as recorded in last week's issue.

Mr. T. R. Heaton, who, as stated in our issue of September 24, retired from the post of District Goods Superintendent, Leeds, was presented with a cheque.



North-Eastern Region presentations at York: (Left to right) Mr. T. R. Heaton, Mr. J. E. Richardson, Mr. H. A. Short, Mr. F. Grundy, Commercial Superintendent, North-Eastern Region

## Further Electrification Schemes in France

### *Operating express services with 50-cycle traction*

According to the present programme, the first to be completed of the new S.N.C.F. electrifications now being undertaken with Swiss financial participation (see our June 11 issue) will be that from Réding to Basle. Extension of the Valenciennes-Thionville 25 kV. 50-cycle project to Réding was authorised earlier this year, as reported in our March 19 issue. This will be effected in stages, and it is intended that conversion from Metz to Réding should coincide with the opening of the Réding-Strasbourg section of the Réding-Basle scheme late in 1956. The Strasbourg-Basle section is due for completion during 1957. With the connection from Réding to Sarrebourg, where passenger trains to and from Paris will change locomotives, the route-mileage of the Réding-Basle scheme is 132.

### **Traffic Diversions to Electric Lines**

This electrification will be the first on the 25-kV. 50-cycle system to handle an important express passenger traffic, and of the 58 Bo-Bo locomotives required, 20 will be designed for a top speed of 74.5 m.p.h. The remainder will be restricted to 65 m.p.h. It is proposed to divert on to the electrified lines, via Hirson, Metz, and Strasbourg, certain seasonal Calais-Basle through trains which run at present via Tergnier, Chalons, and Chaumont. Other diversions in view at present affect a daily Dunkirk-Basle express goods service; and three ordinary goods trains between Thionville and Mulhouse, at present routed via Benestroff, Kalhausen, and Mommenheim, which will run from Benestroff to Mommenheim over the electrified line through Saverne.

Passenger stock for the electric services will be equipped for electric heating at 1,500 V. Train-heating tenders will be used with the sets of steam type coaches operating on the Paris-Basle service.

Four new substations will be required, three of which will be connected directly to the Electricité de France system. To supply the fourth substation a high-tension line 18½ miles in length will have to be provided. The capacity of Réding substation will be increased. Agreement has been reached with the Swiss Federal Railways to equip the terminal platforms for French trains in Basle station with 25 kV. 50-cycle overhead lines, and to arrange for alternative 50-cycle or 16½-cycle supply to sections of the overhead system feeding the through tracks.

### **Dijon to Vallorbe**

The line from Dijon to Vallorbe with its branch from Frasné to Pontarlier and Les Verrières, also forms an important international traffic route. From Dijon to Dôle (28½ miles) the electrification will be at 1,500 V. d.c. Between Dôle and Vallorbe (63½ miles) and from Frasné to Pontarlier (10 miles) the 25 kV. 50-cycle single-phase system will be installed. The Swiss Federal Railways will electrify and work the Pontarlier-Les Verrières section (eight miles) at 15 kV., single-phase, 16½ cycles.

Trains from Paris will be worked without change of locomotive to Dôle, which is a more convenient exchange point than Dijon, where these operations would interfere with the intensive traffic. There will be no provision for alternative supplies to the contact wires at Dôle, but when loco-

motives have to move on to tracks electrified with a system other than their own they will be shunted by small diesel units. At Pontarlier certain sections of the overhead line will be arranged for connection to either form of supply.

Two new d.c. substations will be required on the Dijon-Dôle section, both conveniently sited in relation to existing E.D.F. lines. The 50-cycle sections will be fed from three transformer installations, one of which will be situated in the Dôle d.c. substation. Some extensions of E.D.F. 60 kV. transmission lines will be necessary.

All the new electric locomotives will be of the Bo-Bo type, and according to present plans will comprise nine for 1,500 V. d.c. and 13 for 25 kV., 50-cycle a.c. The Swiss Federal Railways expect to complete the conversion from Les Verrières to Pontarlier in 1955-56. Dijon-Dôle is scheduled by the S.N.C.F. for mid-1957, and Dôle-Vallorbe, with Frasné-Pontarlier, for 1958-59.

## Ferguson Power Units in Industry

To launch a world-wide drive to extend the application of its equipment, hitherto used primarily in farming, to many other operations, Massey-Harris-Ferguson (Sales) Limited, recently staged a series of demonstrations at Stoneleigh Park, Warwickshire. With the Ferguson tractor as the prime power unit, about 50 different tools and implements designed for use with it were demonstrated. They ranged from front-end loaders with cranes and buckets to rear-mounted dump skips, borers to make holes for poles, trench-diggers, rollers, pneumatic drills, pumps, welders, and gritters. The units were seen at work on almost every type of mechanical handling.

Two adapted versions of the Ferguson tractor, one a semi-industrial and the other a full industrial model, were on view. More than 750,000 have been supplied for agricultural use.

At present development by Massey-Harris-Ferguson of these new uses for its equipment is centred on Ferguson products, but steps are being taken to extend the applications to Massey-Harris machines and a Massey-Harris "745" tractor with Horndraulic equipment was shown. For the heavier type of industrial, earth-moving, and forestry work, this machine will be most suitable.

For many operations at present performed at high cost by hand or by expensive specialised machines, the manoeuvrable and economical Ferguson power unit is becoming increasingly accepted by industrialists, contractors and public utilities. Instead of each tool with its own built-in prime-mover, the operator is provided in the Ferguson with a low-priced standard unit working a wide range of quickly interchangeable machines.

### **Method of Cutting Costs**

Mr. T. V. Knox, Sales Director, and Mr. N. F. Newsome, Public Relations Manager, Massey-Harris-Ferguson (Sales) Limited, speaking before the opening of the first demonstration, on October 11, stressed the leading part played by Massey-

Harris-Ferguson in agricultural mechanisation. Their energies were now being turned to industry. There was still too much man-handling and pushing in many branches of industry in this country, where mechanical handling of materials had lagged behind. The Ferguson power unit and the many appliances which could be used in conjunction with it, offered a new method of cutting costs.

A new air compressor, the Ferguson "Hydrovane 60," was first shown to the public at the demonstration. With a capacity of 60 cu. ft. of free air per minute, the compressor provides a highly manoeuvrable and economical source of pneumatic power to operate a wide range of tools. It is designed for mounting on the three-point linkage of the Ferguson tractor and is driven by the belt pulley attachment from the tractor power-take-off shaft. Unlike former eccentric rotor sliding vane compressors of which it is a development, the "Hydrovane 60" is able to give pressures up to 100 p.s.i., by using large volume oil lubrication to provide the sealing for high pressure operation.

## Netherlands Railways Winter Train Services

The winter timetable of the Netherlands Railways came into force on October 3. Delay in delivery of streamline diesel trains on order has meant that the introduction of this form of traction on the Arnhem-Winterswijk and Alkmaar-Hoorn sections must be postponed, but it may be effected during the currency of the timetable. In consequence the Alkmaar-Hoorn section of the table contains two sets of timings, one applying to steam working up to a date to be announced, the other to diesel services to be substituted. Arnhem-Winterswijk trains will stop at Arnhem-Velperpoort when the entire service has been changed over.

On the Eindhoven-Venlo section steam trains will also be withdrawn in the course of the winter. As soon as the first new trailer corridor stock being built becomes available it will run in trains hauled by diesel-electric locomotives on this section. In preparation for this the service will be maintained by diesel streamline trains mixed with ordinary trains. There will be some improvement in frequency. There is now a complete hourly service between Helmond and Eindhoven, and between Helmond and Venlo a partial one given by certain trains in each direction.

### **Additional Trains**

In the west an additional four trains on weekdays make the Rotterdam-Maasland service half hourly. The service also has been improved between Amsterdam-Hoorn-Enkhuizen on weekdays from 12 to 16 trains in each direction.

In view of the heavy loading of the 4.50 p.m. Rotterdam Central to Gouda, where many passengers change for the through and also heavily-loaded express No. 27 from The Hague to Enschede, train 427 leaves Rotterdam at 4.46 p.m. and runs through to Amersfoort. Passengers for Utrecht and Amersfoort, who make use of this connection, have now no need to change, and those travelling to Zwolle and beyond can now board the right express at Amersfoort, the only place where they need to change. On the old line, the 4.36 p.m. from Leyden (Rotterdam Central arrive 5.14 p.m.) leaves Amsterdam Central at 3.57 p.m.



The most important improvement in international services is the addition of seven fast trains in both directions between Maastricht and Liège, making the run in 31 min. They are composed of Netherlands Railways diesel-electric stock. To provide the Gooi district on Sundays and public holidays with a day connection to West and South Germany a train leaves Amsterdam at 6.28 a.m., and runs via Hilversum to Utrecht, arriving at 7.15 and connecting there with the "Lorelei" express, which leaves Utrecht at 7.39 a.m. Trains D 35 and D 34, from The Hague (H.S. station) to Brussels and Basle, and the reverse, have been taken off as between The Hague and Brussels, Trains D 266 and D 265, from Nijmegen to Munich and Basle, and the reverse likewise have ceased to run.

### Flash Butt Welding Depot, Western Australia

In view of the amount of re-railing to be undertaken, the Western Australian Government Railways Commission decided to adopt a policy of welding rails in considerable lengths for its main line track. Orders were therefore placed for the main items of welding equipment at the end of 1949.

A site adjacent to the rail stores of the Comptroller of Stores at Midland Junction was chosen for the establishment of a flash butt welding depot. This already had rail connection needing little modification and the proximity to the stores meant that the double handling of rail supplies could be reduced to the minimum.

The initial programme was the welding of six 40-ft. 82-lb. rails into a 240-ft. length, for relaying on the Eastern Goldfields Railway and the South Western Railway. The welded length has now increased to 270 ft., made up of six 45-ft. rails; 45 ft. is the greatest length of rail that can be obtained without undue difficulties. The requirements of the railway indicate that it would be necessary to relay at a minimum rate of 100 miles a year, to keep up to schedule, and when the possibilities of reconditioning recovered material were considered, it was decided to install two welding machines.

#### Sequence of Operations

Rails are received on a preparation bank served by a 3-ton overhead electric crane. Here the necessary processing, cropping, and drilling of secondhand rails, cleaning and general sorting are carried out. The rails are then fed on rollers into the main welding shop housing the two welding machines. The machines are Aston Type APF/30 butt welding machines (electrical rating 300 k.V.a.), manufactured by the Aston Electrical Products Pty., of Sydney, New South Wales. They can weld rails up to 113 lb. and mild steel sections up to 16 sq. in. They operate on 400/415 V., 3-phase, 50 a.c. supply. As at the time of installation of the machines the State Electricity Commission was not able to supply this power, a 350-k.V.a. alternator, driven by a 500-h.p. horizontal cylinder Crossley oil engine, was provided. This unit was installed in a separate power house which also houses the compressed air supply for the welding machines, chipping hammers and grinders. However, with the advent of the South Fremantle Power Station, power supplies are being drawn from that source.

After the welding process, the extruded

metal is roughly removed by chipping hammers and the rails then passed out to the finishing banks. There are two finishing banks; one will take rails up to 270 ft. long and the other rails up to 360 ft. long. On the finishing bank, the remainder of the extruded metal is ground down to leave the joint perfectly smooth. The rails are next marked with their length and number and are then ready to be loaded on to the special rake of seven flat top wagons for despatch. Four sets of gantries running transversely across the bank are provided for the loading process.

The plant came into operation in August, 1953, and by the end of June, 1954, some 83½ miles of new track had been welded.

### Equipment for British Railways

Mr. J. H. Brebner, Chief Public Relations & Publicity Officer, British Transport Commission, replied in a letter published in *The Financial Times* of October 21 to a letter published the previous day, from Mr. B. Engert, who had criticised British Railways' use of obsolete equipment.

In his criticism, Mr. Brebner pointed out, Mr. Engert failed to appreciate the arrears of capital development and shortages of material with which the B.T.C. had had to contend since 1948.

Mr. Engert had criticised the railways particularly for "overhauling and re-decorating much of the antiquated passenger rolling stock," instead of obtaining new vehicles. The patching-up of old stock, said Mr. Brebner, had not been done from choice, but had been forced on the railways from necessity. In 1952, the steel shortage prevented any allocation of steel for coaching stock and at the end of 1953 the accumulated arrears of new building amounted to over 2,000 passenger coaches.

Reference to Chapters IV and V of the

Commission annual report for 1953 would show what was being done towards the modernisation of the railways, and in Chapter VII it was stated that the future objectives include "an equipment, in the widest sense of the word, of modern design and fit to give reliable and speedy transport service on a large scale," and that besides projects already in hand, the Commission was working on a long-term plan for the modernisation of the equipment of British Railways.

### West German Winter Passenger Timetable

Few important alterations are incorporated in the German Federal Railway winter timetable. There is an increase in the number of fast trains without supplementary charge, and certain summer service trains are being continued as they have proved very popular.

Electric working was introduced on October 3 between Nuremberg and Würzburg, as recorded in our October 15 issue. For the time being only two through passenger trains, D404 Dortmund-Passau and D 57 Passau-Dortmund, are being worked electrically south of Würzburg. With the aid of some reduction in time at stops the former train now gains 58 mins. and the latter 47 on the Passau-Würzburg run, or 40 and 26 respectively on the newly electrified section alone, on introduction of the 1955 summer timetable all trains will be run electrically hauled.

Because of the general reduction in traffic, and to enable overhauls to be effected, one of the ferry vessels between Grossenbrode and Gedser has been withdrawn. The "Alps", "North-West" and "Adria" expresses also have ceased to run; these trains connected with the ferry services. The "Scandinavian-Holland Express," from the Hook to Copenhagen, now runs via Flensburg-Fredericia-Nyborg-Körsör.

### Royal Departure from Waterloo



At Waterloo on October 20. Speaking to the Queen Mother, before her departure for Southampton en route to the U.S.A., is Mr. C. P. Hopkins, Chief Regional Manager, Southern Region, and behind him is Mr. S. W. Smart, Superintendent of Operation. Sir Brian Robertson, Chairman, British Transport Commission, is standing between the Queen Mother and Princess Margaret

A number of fast trains are now running without supplementary charge. The two parts of the "Rheingold" (Hook-Basle and Dortmund-Munich, are being run as one train experimentally between Cologne and Mainz.

To improve connections with Luxembourg a railcar service between there and Trier has been put on, with a connection to the Ruhr which gives departure from Luxembourg at 4.28 p.m. and arrival in Cologne at 9.41, and leaves Cologne at 3.26 p.m., arriving in Luxembourg at 8.25.

## Staff & Labour Matters

### London Bus Workers

After the return to work last week of London Transport bus drivers and conductors after their unofficial strike, talks on improved rates of pay and conditions of service began on October 22 between representatives of the London Transport Executive and of the Transport & General Workers' Union.

### Dublin Dock Strike

The British & Irish Steam Packet Co. Ltd. passenger, freight, and livestock services between Liverpool and Dublin were suspended earlier this week because of a strike of dockers in the Port of Dublin. Passengers were diverted via Holyhead-Dun Laoghaire.

## Parliamentary Notes

### Overseas Resources Development Bill

Mr. Alan Lennox-Boyd (Secretary of State for the Colonies), moving the Second Reading of the Overseas Development Bill in the House of Commons on October 20, said that in 1951 a Command Paper set out various proposals for three areas in Tanganyika—Kongwa, Nachingwea, and Urambo. It was laid down that the annual net loss on the railway until 1957 should be met. The huge crops which had been expected from Nachingwea did not materialise. The port and railway were already under construction, however, and as the Tanganyika Government had developed plans for the Southern Province, it was decided to complete the port and railway. It was agreed in March, 1952, that the Overseas Food Corporation should advance the capital required to build the port and the railway and to meet four-fifths of the loss that was recognised as bound to arise for as long as it should continue.

The Tanganyika Government agreed to provide the capital cost, about £750,000, to extend the railway further and to meet one-fifth of the annual net loss, and they also said they would do their utmost with feeder roads and by general developments to bring profitable cargoes to the line. East African Railways undertook to raise a loan to repay the cost of constructing both the railway and the port. With the end of the Overseas Food Corporation it was recommended that its commitments should be taken over directly by the Government in London. The agreement was now in draft form, and it would provide that the Colonial Development Corporation would waive repayment by the railway of all cash advances up to March 31 last year with interest and would also waive the interest of all advances made after that date up to the time of signing. The Tanganyika Government, for its part, would assume responsibility for the annual

net loss on both the port and the railway from the time the agreement was drawn up, and the railway would repay to the Government in London all cash advances made under previous agreements after March 31 this year plus any interest accruing as from the date of the agreement.

### Cost of Works

The railway and port had cost some £6,000,000. It was vital to reduce the capital investment to a bearable figure so the Government had in effect agreed to wipe off the capital advances which, with interest, totalled some £4,200,000 and so to reduce the capital on the port and railway to a sum of about £2½ million. In return the Government were relieved of their continuing guarantee to underwrite four-fifths of any loss on the railway.

Mr. Glenvil Hall (Colne Valley—Lab.) asked whether the Government could see their way to wipe off the whole of the £6,000,000. The amenities were not only going to be of the utmost benefit to Tanganyika but the railway might soon be extended and be of much greater use to other areas in the interior. The railway might be extended to Lake Nyasa and presently become an outlet to the sea for Northern and Southern Rhodesia and Nyasaland itself. That would be an alternative to running a railway from the Rhodesias through what was mainly desert to Walvis Bay on the other coast.

### Narrow Gauge Lines

Mr. James Johnson (Rugby—Lab.) asked if it was the Government's intention to spend what Sir Alexander Gibb and his partners said it would cost—£10,000 a mile—and take it 400 miles beyond Nachingwea to Lumesule Juu and Songea, because there they had many scores of millions of tons of good coal and also sub-bituminous coal, and they had iron ore at Liganga. He drew attention to the American example where they used a narrow gauge for metals and minerals of this nature. They avoided the steeper gradients, they did not mind taking detours, and they had a much cheaper and more effective technique for getting into the back blocks for metals of that kind.

Mr. Henry Hopkinson (Minister of State for Colonial Affairs) said it appeared to him that the railway was almost the most important part of the Bill. It entailed the writing off of a sum of approximately £4,200,000 in loans advanced by the Overseas Food Corporation together with interest thereon. The Government were relieved of the obligation to make any further capital advances to finance the completion of the project. Secondly, they were released from a very heavy and unlimited commitment in the shape of the guarantee of the operating deficit on the port and railway, which guarantee was for an indefinite period. Based on the estimated cost of the port and railway that guarantee over a long period would have cost more than the sum now being written off. The port and railway would provide the means of carrying out the development of the Southern Province in the way they deserved.

Mr. Glenvil Hall asked if they were to understand that the Tanganyika Government would now have to find the interest and, possibly, the sinking fund on the £2,500,000 still left on the railway and harbour, in addition to the quite considerable losses which would occur for many years on the operating costs of both the

harbour and the railway undertakings.

Mr. Hopkinson said that was the position. The Tanganyika Government had certainly not expressed any reluctance to do that.

The Bill was given a Second Reading, and committed to a Committee of the whole House.

## Questions in Parliament

### Battery Locomotives for Scotland

The Secretary of State for Scotland was asked in the House of Commons on October 19 by Mr. Hector Hughes (Aberdeen North—Lab.) the nature and result of his conversations with the Minister of Transport & Civil Aviation and the Scottish Hydro-Electric authorities which were directed towards using Scottish electricity to charge batteries for battery-run locomotives on Scottish railways; and when and where he expected such locomotives to be available for use on Scottish railways.

Mr. James Stuart replied that he had had no such conversations. He understood, however, that the North of Scotland Hydro-Electric Board had raised the matter with the British Transport Commission and that further discussions were in view.

Mr. Hughes said that the Secretary of State had been widely credited with taking those progressive measures. If he had not taken them, he asked Mr. Stuart to have such conversations.

Mr. Stuart replied that the North of Scotland Hydro-Electric Board had to provide electric power and it was for the British Transport Commission to look after the transport service. They were already in consultation.

### Queensferry Ferry Service

The Minister of Transport & Civil Aviation was asked by Major W. J. Anstruther-Gray (Berwick & East Lothian—C.) on October 20 whether he could name a date by which the new and improved Queensferry ferry service would be in operation.

Mr. John Boyd-Carpenter, in a written reply, stated: I am informed by the B.T.C. that it is estimated that work on the piers will be completed at the end of next year, and the new ferry vessel will be delivered early in 1956.

### Road Haulage Undertaking Disposal Loss

Mr. David Renton (Huntingdon—Nat. Con.) on October 20 asked the Minister of Transport & Civil Aviation what was his provisional estimate, in accordance with Section 14 of the Transport Act, 1953, of the capital loss on the disposal by the B.T.C. of their road haulage undertaking; and over what period he had determined that instalments should be paid to the Commission.

Mr. John Boyd-Carpenter stated in a written reply that his provisional estimate was £20,000,000. With the approval of the Treasury, he had provisionally determined as five years the period over which this sum, together with the sum of £1,000,000 due to the Commission in respect of loss from disturbance, should be paid by annual instalments.

### Transport Levy Yield

In a written reply on October 20 to Mr. James Callaghan (Cardiff S.E.—Lab.) Mr. John Boyd-Carpenter (Minister of Transport & Civil Aviation) stated the sum yielded by the transport levy was £3,789,000 up till the end of August.

## Contracts & Tenders

Hurst, Nelson & Co. Ltd. has received an order to build six 16-ton all-steel mineral wagons for Fraser & Chalmers Engineering Works.

An order for 250 bogie high-side wagons has been placed by Rhodesia Railways with the Metropolitan-Cammell Carriage & Wagon Co. Ltd.

The British Transport Commission has placed orders with the following firms for the supply of wagons:—

20-ton ballast and sleeper wagons	No. of wagons
Gloucester Railway Carriage & Wagon Co., Ltd., Gloucester	122
The Derbyshire Carriage & Wagon Co. Ltd., Chesterfield	60
Cambrian Wagon & Engineering Co. Ltd., Maindy, Cardiff	70
The Butterley Co. Ltd., Codnor Park, near Nottingham	152
19-ton hopper ballast wagons with vacuum brakes	
Metropolitan-Cammell Carriage & Wagon Co. Ltd., Birmingham	60
25-ton well trolley wagons "Weltrol Wbb"	
Head, Wrightson & Co. Ltd., Thornaby-on-Tees	6

The High Commissioner invites tenders for crank axles. See official notices on page 504.

The Special Register Information Service, Export Services Branch, Board of Trade, reports a call for tenders for all-steel metre-gauge, bogie coaches for Thailand. The total number required is 376 of various types.

Tenders in sealed envelopes, clearly marked "Tender for All Steel Bogie Carriages BE 2497" should be addressed to the Stores Superintendent, State Railways of Thailand, Bangkok, to reach him by December 2. A copy of the tender documents, including specification drawings and conditions of tender, may be borrowed by United Kingdom firms in order of application to the Branch (Lacon House, Theobalds Road, W.C.1).

According to the Special Register Information Service, Export Services Branch, Board of Trade, the Ports, Railways & Transport Department, Lourenço Marques, is calling for tenders for 13 items of spare parts for electric power station, including carriage rollers, gear box spur wheels, carriage frames. Tenders must be submitted by November 15.

A copy of the tender documents No. 147/54 (in Portuguese) is available for loan to United Kingdom firms in order of receipt of application to the Branch, Lacon House, Theobalds Road, W.C.1. United Kingdom firms are reminded that they cannot submit tenders direct, but only through firms established in Mozambique.

The Director General of Supplies & Disposals, New Delhi, is inviting tenders for the following:—

564,767 transverse steel trough sleepers, m.g., for 60 lb. rails  
702,841 do. for 50 lb. rails  
5,070,432 spring steel loose jaws for steel transverse trough sleepers  
5,070,432 two-way keys

Tenders are to be submitted to the Director General of Industries & Supplies, Shahjahan Road (Section SR1), New Delhi, quoting reference SR2/Sleepers/72/11. They will be received up to 10 a.m. on November 12.

Forms of tender are available for purchase in India from the Deputy Director General (Supplies), Directorate General of Supplies & Disposals, New Delhi; Director of Supplies & Disposals, Bombay or Calcutta; Deputy Director of Supplies & Disposals, Madras.

If the date for the receipt of tenders does not allow sufficient time for tenderers to obtain tender forms from India, they may submit their quotation to India in their own letter form or by telegram so long as all essential particulars are given and provided they simultaneously apply for the tender forms and return them duly completed as quickly as possible on the basis of advance quotations already submitted.

Forms of tender may also be purchased from the India Store Department on payment of a fee of 17s. 3d. and the drawing may be seen at the offices of Hodges Bennett & Company, 59-60, Petty France, London, S.W.1, from whom copies may be obtained at a fixed price per sheet.

The Special Register Information Service, Export Services Branch, Board of Trade, reports a call for tenders by the Foreign Operations Administration (F.O.A.) for (a) 14 diesel-electric locomotives; (b) spare parts for Spain.

The locomotives are to be suitable both for passenger and goods traffic and able to develop a power of at least 1,300 h.p. The locomotives and spare parts must be in accordance with the schedule of technical and special conditions prepared by the Spanish National Railways (Renfe). The maximum amount of the spare parts is \$425,000.

The locomotives offered must be of the same type or similar type to others constructed by the tenderer of which at least 50 have been working for one year to the complete satisfaction of the railway authorities purchasing them.

Gauge of track (inside edges of rails), 1-674 m.

Maximum weight per axle in working order (this figure cannot be reduced under any circumstances), 19 tonnes

Maximum weight per linear metre, 6.5 tonnes  
Minimum radius of curves: (i) on main line without gauge widening, 250 m.; (ii) on branch lines with gauge widening, 100 m.

Type of drawbar coupling, buffers, and brake shoes, Standard RENFE

Brake: (i) locomotive, compressed air and rheostatic; (ii) train, vacuum

Maximum height of line above sea level, 1,400 m.

Extreme temperatures,  $-15/+45^{\circ}\text{C}$  in the shade

Fuel, gas-oil

Minimum range without displacing any intermediate part, 1,000 km.

Maximum speed, 105-110 km./h.

Starting effort, 25 per cent adhesion

The locomotive shall have a boiler for train heating

Tenders should reach the Director, Red Nacional de los Ferrocarriles Españoles, Madrid, by December 6. A copy of the tender documents and blueprints, in Spanish, may be borrowed by United Kingdom firms in order of application to the Branch (Lacon House, Theobalds Road, London, W.C.1). Tenders must be in Spanish, or at least accompanied by a translation in that language of the essential

parts, and shall indicate: (a) origin of the material offered; (b) price in dollars per locomotive f.o.b. in first class port which must be indicated in the offer. If the locomotives are transported by land the price must be given for the locomotive placed on the Spanish track at a frontier station; (c) unit price in dollars for each of the spare parts and elements offered f.o.b.

The Special Register Information Service, Export Services Branch, Board of Trade, has issued a statement on the Foreign Operations Administration and Tender Procedure. It states that the Foreign Operations Administration (F.O.A.) is the agency of the United States Government which administers United States economic aid programmes. The methods used by the F.O.A. in arranging procurement of the goods supplied under these programmes were described in Special Register Circular GEN/1180 of March 1.

In that circular subscribers were advised that the United States Government frequently uses the General Services Administration, Washington, as its purchasing agent. United Kingdom firms were therefore recommended to register both at the headquarters of the General Service Administration at 7th and D. Streets, S.W., Washington 25, D.C., and at its European Office, 429, Oxford Street, London, W.1.

The Board of Trade now understands from the London office that in the past some opportunities have been lost by United Kingdom firms and that a number of bids submitted have been declared "non responsive" (unacceptable), because firms have not complied with the conditions laid down in the invitations to bid issued by the United States Authorities.

The following are the more common reasons why bids have been rejected by G.S.A.:—

(a) failure to quote all prices in U.S. dollars and submitting merely a total figure for the whole, instead of quoting prices for each individual item in a tender;

(b) objection to inspection of factories by authorised U.S. officials;

(c) failure to undertake delivery within the time specified;

(d) refusal to promise that goods supplied will be marked with correct F.O.A. symbols;

(e) failure to accept payment terms indicated in invitations to bid.

The European office is anxious to secure quotations from United Kingdom suppliers, but it is understood that only in exceptional circumstances can the tender conditions be varied.

**DEMONSTRATION OF JONES KL CRANES.**—Through the courtesy of the Western Region, British Railways, a series of demonstrations of Jones KL cranes was staged recently at Canton Yard, Cardiff, by George Cohen, Sons & Co. Ltd., United Kingdom distributors of Jones KL mobile cranes for their 600 Group associates, K & L Steelfounders & Engineers Limited. The cranes, the KL44 and KL66, of four- and six-ton capacity respectively, handled a typical selection of mixed loads which included steel billets, road/rail containers, cable drums, and so on. The KL44 crane also demonstrated coal grabbing, using a single chain ring discharge grab. A similar demonstration was given by the KL66, using a self dumper type of hook on the grab. Guests were afterwards conveyed to the Royal Hotel, Cardiff, where two films were shown, each depicting the Jones KL mobile cranes in action.



## Notes and News

**Senior Mechanical Draughtsman Required.**—Applications are invited for the post of senior mechanical draughtsman. Experience in railway trackwork an advantage but not essential. See Official Notices on page 504.

**Assistant Engineer, Mechanical, Required.**—Applications are invited for the post of assistant engineer, mechanical, required for the London office of the Crown Agents for Oversea Governments and Administrations. See Official Notices on page 504.

**Assistant Traffic Superintendent Required.**—Applications are invited for the post of assistant traffic superintendent, railway department, required for the Gold Coast Local Civil Service, for two tours each of 12 to 24 months in the first instance. See Official Notices on page 504.

**Vacancies for Design Engineer and Draughtsman.**—Brush Bagnall Traction Limited, Loughborough, have vacancies for a design engineer and a draughtsman in the rotating machine department for work in connection with diesel-electric locomotives. See Official Notices on page 504.

**Uttoxeter-Buxton Passenger Service.**—The London Midland Region announces that the passenger service on the Uttoxeter-Buxton branch will be withdrawn and Tissington Station closed for all traffic on and from November 1. The stations affected are Norbury & Ellaston; Clifton for Mayfield; Ashbourne; Thorpe Cloud (for Dovedale); Tissington; Alsop-en-le-Dale (for Dovedale); Hartington; Parsley Hay; Dowlow Halt; and Hindlow.

**Presentation of Meritorious First-Aid Awards at Paddington.**—In the Board Room at Paddington on October 19, Mr. K. W. C. Grand, Chief Regional Manager, Western Region, who was supported by a number of chief officers of the Region, presented 10 Class 1 awards (clock with an appropriate engraved silver plate and framed certificate) and six Class 2 awards (framed certificates) to members of the Western Region staff, in recognition of

exceptionally meritorious first aid rendered during the past year. A vote of thanks to Mr. Grand was proposed by Mr. Gilbert Matthews, Operating Superintendent.

**Stephenson Locomotive Society.**—A special meeting of the Stephenson Locomotive Society open to all interested, will be held at the Grand Hotel, Bristol, on Wednesday, November 10, at 7.30 p.m., with the object of establishing a new centre for the area. At the meeting a ciné film will be shown by Mr. D. Camwell depicting railway scenes throughout the British Isles.

**B.T.H. Nottingham Representation.**—The British Thomson-Houston Co. Ltd. announces that, to give greater service to customers in Nottingham and district, Mr. J. N. Griffiths, who has previously handled the electrical plant and apparatus business from the company's Sheffield Office, is now at the B.T.H. Nottingham premises, 71-73, Lower Parliament Street, Nottingham (Telephone: Nottingham 43588).

**J. W. Roberts Limited.**—J. W. Roberts Limited, Armley, Leeds, is opening branch offices in Glasgow and Birmingham on November 1, 1954. The Glasgow office at 213, West Campbell Street, Glasgow (telephone, Glasgow-Douglas 8882) will be under the management of Mr. Allan Duncan. The Birmingham office at Grand Chambers, 146, Corporation Street, Birmingham (telephone Birmingham-Central 4631) will be under the management of Mr. W. M. Adey.

**Coastal Shipping and Canals to Relieve Roads.**—Opening the Motor Show at Earls Court, London, on October 20, Field Marshal Lord Montgomery suggested that the problem of roads in Great Britain might be eased by transferring bulky and heavy consignments from the roads to coastal sea traffic and canals. "The whole problem calls for new thinking," he added "which should embrace our transport system as a whole." Capital reserves in this country were not unlimited, and priorities of expenditure as between air, rail, and road must be settled. Without intelligent forward planning there

would be more and more restrictions to make traffic fit for the roads, instead of ensuring roads capable of coping with the kind of traffic for which they were best suited.

**Lightalloys Limited Dividend.**—The directors of Lightalloys Limited have declared a final dividend for the year ended June 27 last of 5d. per 5s. share, making 6½d. per share compared with 10½d. per share in the previous year. Profit for the year, before taxation of £5,190 (£20,700) was £17,065 (£31,476).

**Railway Vehicles Exports.**—The latest Board of Trade statistics reveal that during the nine months ended September 30, 1954, railway vehicles to the value of £34,650,917 were exported from the United Kingdom. This compares with a value of £29,704,464 for the corresponding period last year. Locomotives and railcars accounted for £14,381,140 (£8,181,253). The number of locomotives and railcars rose from 688 (24,248 tons) to 771 (37,577 tons).

**Institute of General Managers First Annual Dinner.**—Among the principal guests who have indicated their intention of being present at the first annual dinner of the Institute of General Managers to be held at the Savoy Hotel, London, on Friday, December 3, are the Duke of Rutland and Lord Balfour of Inchrye. Chief executives wishing to attend the dinner, or to receive further information concerning the aims and objects of the Institute should write to the Registrar, the Institute of General Managers, 86, Eccleston Square, London, S.W.1.

**New Offices of Railway Benevolent Institution Opened.**—The new offices of the Railway Benevolent Institution 30, Tavistock Square, London, W.C.1, were formally opened on October 20 in the presence of a representative gathering of guests and members of the Board of Management. The event was also the occasion of a presentation to the retiring General Secretary, Mr. H. C. Walton, to commemorate his 27 years in that office, and to introduce his successor, Mr. C. H. Cowtan. Welcoming the guests Mr. George Morton, a member of the board, proposed the Toast of "The Institution" coupled with the name of Mr. C. P. Hopkins, Chairman of the board, and stated that they were proud of the work of the Institution; over £83,000 had been distributed in relief during the past financial year. Mr. J. W. Watkins, also a member of the board and Chairman elect for 1955, supported the toast, which was received with acclamation.

**Tin-Zinc Plating Process.**—The Tin Research Institute, of Perivale, Middlesex, has invented a new alloy plating claimed to be effective in preventing the corrosion of steel, and members of the technical press were invited to see a demonstration of the tin-zinc plating process at the Institute laboratories. The new plating is an alloy of 75 per cent tin and 25 per cent zinc, and was developed initially during the war years; since then further development work has been conducted. As a result, the process is being increasingly employed in the electrical and other industries for switchgear, oil filters, hydraulic systems, and motor car components. Tin-zinc plating is a simple one-bath process, and the standard methods of pickling and degreasing are used. The hardness of the alloy coating is less than that of zinc, but considerably greater than tin. The alloy coating does not flake on impact, and it



Mr. K. W. C. Grand with the 16 members of the Western Region staff who received meritorious first-aid awards

is stated to have useful anti-frictional qualities. A feature of the tin-zinc process is its throwing power, which makes it particularly suitable for the plating of intricate shapes, a high lustre can also be obtained. While generally used for the protection of steel, it can be deposited directly on brass and most other high-copper alloys, but not deposited direct on aluminium or zinc-base alloys.

**Hope of Larger Travel Allowance.**—In the course of his speech at the Lord Mayor's dinner to bankers and merchants of London at the Mansion House on October 20, Mr. R. A. Butler, Chancellor of the Exchequer, reminded his audience that he had increased the foreign travel allowance recently. He went on to say that there was a possibility that the allowance might be increased again later. The allowance of £100 announced by the Treasury on October 5 will be available for the year commencing on November 1.

**U.S.A. Attempt to Link Coal Sales with F.O.A. Indian Locomotive and Wagon Contracts.**—It is reported that Mr. H. Stassen, Director of the Foreign Operations Administration in Washington, is endeavouring to urge countries which seek contracts financed by F.O.A. for building railway material for India to buy surplus U.S.A. coal. The contracts were referred to editorially in our September 10 issue. An official of F.O.A. has denied allegations that the Administration intends to enforce a rigid policy of paying half in money and half in coal for railway equipment for India bought from overseas countries.

**Review of World Markets for Locomotives.**—A review of overseas markets for locomotives has been made by the Board of Trade in fulfilment of a promise made last July by Mr. D. Heathcoat Amory, then Minister of State, Board of Trade, after he and other Ministers had seen a deputation from the Amalgamated Engineering Union to discuss the question of possible redundancy in the locomotive building industry. Mr. A. R. W. Low, the present Minister of State, is reported to have stated in a letter to the Parliamentary Committee of the Amalgamated Engineering Union, that the survey points

to the need for a great effort in the home industry to meet competition from abroad in both steam and diesel locomotives.

**L.M.R. Exhibits in Derby Industrial Cavalcade.**—British Railways, London Midland Region, included four exhibits in the Derby Industrial Cavalcade held recently to celebrate the County Borough 800 years' charter celebrations. Besides a model of the *Rocket* there were cut-out models of the Derby Works Training School and of the front end of one of the new two-coach diesel trains, and a display advertising railway travel.

**Floods Sever Italian Main Line.**—Storms which began to sweep across central Calabria on October 25 caused floods that cut the main Naples-Reggio (Calabria) line of the Italian State Railways between Vietri sul Mare and Salerno. Parts of the track were carried into the sea. Vietri sul Mare is 50 km. south of Naples Central.

**Exide Motor Show Luncheon.**—Chloride Batteries Limited, manufacturers of Exide products, gave a luncheon at the Clarendon Restaurant, Hammersmith, on October 20, on the occasion of the Motor Show at Earls Court. Mr. H. V. Schofield, Director, Chloride Batteries Limited, proposing the toast of the Press and guests, stressed the importance of restlessness in research and the pursuit of greater efficiency. He announced increases in exports—in the face of the subsidisation of some foreign firms—and home sales of Exide products. Batteries, he pointed out, were of the utmost importance in increasing industrial productivity and reducing costs through the mechanical handling and movement of goods. Mr. Arthur B. Bourne, Director, Iliffe & Sons Ltd., replied for the Press, and Mr. D. Stokes, Director & General Sales Manager, Leyland Motors Limited, for the guests.

**Reorganisation of the A.E.I. Group.**—The Associated Electrical Industries companies have been reorganised into four groups: the British Thomson-Houston, the Ediswan-Hotpoint, the Metropolitan-Vickers Electrical, and the Overseas Groups. The reorganisation and all consequent appointments took effect from October 11. The Chairman of A.E.I. is

Chairman of each of the groups. The Group Managing Directors, as announced in our October 8 issue are Mr. E. H. Ball (B.T.H.), Mr. A. N. E. McHaffie (Ediswan-Hotpoint), Dr. C. Dannatt (M-V.E.), and Dr. I. R. Cox (Overseas). The Group Managing Directors are members of the A.E.I. Board (Dr. Dannatt and Mr. McHaffie were appointed Directors from October 1), and form, with the Chairman, the executive committee of the board. The Group Managing Director of the Overseas Group is the A.E.I. nominee director on the boards of A.G.E., First Electric and Vecor, and will become Chairman of A.E.I. (India) and A.E.I. (Pakistan). The B.T.H. and M-V.E. Export Companies will operate as at present. To ensure the closest liaison, however, the Group Managing Director of the Overseas Group has become Chairman of the B.T.H. and M-V.E. Export Companies. As part of the reorganisation Mr. G. A. Cheetham, Managing Director of Ferguson Pailin, joins the board of Metropolitan-Vickers; he continues as Managing Director of Ferguson Pailin.

## Forthcoming Meetings

- Until end of year.—"Popular Carriage" Exhibition (Two centuries of carriage design for road and rail) in the Shareholders' Meeting Room, Euston Station, London, N.W.1. Weekdays 10 a.m. to 7 p.m.; Sundays 2 to 7 p.m.
- November 5 (Fri.).—Institute of Transport, Midland Section. Annual dinner at the Imperial Hotel, Birmingham, at 6.15 p.m.
- November 5 (Fri.).—Institute of Transport, Western Section, at the Docks Office, Bristol, at 1.15 p.m. Paper on "Lost Property," by Mr. G. S. M. Birch.
- November 8 (Mon.).—Historical Model Railway Society, at the headquarters of the Stephenson Locomotive Society, 32, Russell Road, London, W.14, at 7 p.m. Talk entitled "The world of model railways," by Mr. R. J. Raymond.
- November 9 (Tue.).—South Wales & Monmouthshire Railways & Docks Lecture & Debating Society, in the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m. Paper on "Reminiscences at Southampton Docks," by Mr. P. R. Biddle, Docks & Marine Manager, Southampton.
- November 9 (Tue.).—Railway Service Christian Union Birthday Celebrations, in the London Midland Region Clerical Dining Club Hall, Cardington Street, Euston, N.W.1, at 6.15 p.m. Illustrated talk by Mr. Cecil J. Allen, entitled "Across the roof of Europe by the Glacier Express."
- November 10 (Wed.).—Institute of Transport Anniversary Luncheon at the Connaught Rooms, Great Queen Street, London, W.C.2, at 12.30 for 1 p.m.
- November 10 (Wed.).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas' Street, London, S.E.1, at 5.45 for 6 p.m. Illustrated paper on "Charting the seas," by Commander J. H. Macmillan, Southampton Harbour Board.
- November 10 (Wed.).—Institute of Traffic Administration, London Centre, at 16, Queen Anne's Gate, London,



Model of front end of British Railways diesel train as part of London Midland Region display in Derby Industrial Cavalcade

- S.W.I. at 7 p.m. Supper meeting. Mr. Gerald Nabarro, M.P., and Mr. A. J. Champion, M.P., debate "Monopoly in transport, private or public."
- November 10 (Wed.).—Corporation of Industrial Managers. Meeting to be addressed by Mr. Winston Rodgers, in the Charing Cross Hotel, Strand, W.C.2, at 7.30 p.m., on "The manager and industrial engineering."
- November 11 (Thur.).—Institution of Electrical Engineers, at Savoy Place, London, W.C.2, at 5.30 p.m. Paper on "The overhaul and maintenance of D.C. traction motors," by Mr. J. G. Bruce.
- November 11 (Thur.).—Public Transport Association at Grosvenor House, Park Lane, London, W.1. Annual dinner.
- November 11 (Thur.).—British Railways, Western Region, London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Debate with Oxford University Railway Society at Oxford.
- November 11 (Thur.).—British Railways, North Eastern Region, York Locomotive Society, at the Railway Institute, Queen Street, York, at 6.45 p.m. Paper on "The career of the steam locomotive," by Mr. W. A. Tuplin.
- November 11 (Thur.).—Locomotive Society of Scotland, at 302, Buchanan Street, Glasgow, C.2, at 7.15 for 7.30 p.m. Paper on "The development and operation of locomotive injectors," by Mr. R. Metcalfe.
- November 11 (Thur.).—Hull District Stationmasters' Discussion Group. Open meeting in the Anlaby Road Institute. Paper on "Electrification, Wath-Sheffield-Manchester," by Mr. H. C. Johnson, Divisional Operating Superintendent (Western), Eastern Region, Liverpool Street.
- November 13 (Sat.).—Stephenson Locomotive Society, North-Western Area, at the Manchester Geographical Society's Rooms, Deansgate, at 6.15 p.m. Talk on "An enthusiast recollects," by Mr. Stewart Dewsbury.

## Railway Stock Market

Stock markets turned easier this week because of the dock strike, but there was further buying of industrial shares, many of which have reached fresh high levels. Share prices have been rising all this year and despite the big gains, selling remains negligible compared with the volume of buying orders. Many of the latter are on behalf of investment trusts, insurance companies, and pension funds which are tending to invest a larger part of their funds in industrial shares. Though by far the larger part of their resources are still in fixed-interest stocks, the general tendency to put somewhat more into ordinary shares has a big cumulative effect on the industrial section of the Stock Exchange. Moreover, buying by investment institutions and pension funds is largely as a holding for more than a short period, not for selling to make a quick turn profit but for income. The big rise in prices has put many leading shares on a yield basis around  $3\frac{1}{2}$  per cent, but this has to be considered in relation to the widespread expectations of further dividend increases next year. These hopes seem soundly based, because earnings of a wide range of companies are still rising, and because in some cases the rise in net profits will be

substantial as results for the current year will reflect the end of E.P.L.

With buying interest still centred on industrial shares, it is not surprising that interest in Dominion and foreign rails has been small and selective.

Canadian Pacific were active and higher, and although best prices were not quite held, have risen on balance from \$48 $\frac{1}{2}$  to \$49 $\frac{1}{2}$ . Canadian Pacific 4 per cent non-cumulative preference stock attracted because of the yield of nearly  $5\frac{1}{2}$  per cent, and was £70 $\frac{1}{2}$ , compared with £69 $\frac{1}{2}$  a week ago. The 4 per cent debentures at £91 $\frac{1}{2}$  were fractionally lower and would seem attractive as the yield is over  $4\frac{1}{2}$  per cent, which is a good return for a high class investment security such as this.

Buying interest increased in White Pass, which rose further from \$32 $\frac{1}{2}$  to \$34 $\frac{1}{2}$ . The convertible debentures changed hands up to £114 and the loan stock was again £33.

Midland of Western Australia remained at 24, while the first debentures kept at 92 and the second debentures at 42 $\frac{1}{2}$ . Emu Bay 5 per cent debentures at 44 $\frac{1}{2}$  were also the same as a week ago.

Barsi, in Indian stocks, was again quoted at 92 $\frac{1}{2}$  and untested by dealings, while West of India Portuguese capital and debenture stocks were both again quoted at 87 $\frac{1}{2}$ .

Costa Rica second debentures strengthened further from 53 $\frac{1}{2}$  to 55 in response to the interest payment, but the ordinary stock was fractionally lower at 10 $\frac{1}{2}$ .

A little selling put Dorada ordinary stock back from 81 $\frac{1}{2}$  to 79 $\frac{1}{2}$ , but the 6 per cent debentures held at 92 $\frac{1}{2}$ . Paraguay Central 6 per cent debentures were quoted at 19 $\frac{1}{2}$  and Guayaquil & Quito 5 per cent first bonds at 59.

Mexican Central "A" debentures gained two points at £76 and were more active, partly, it was reported, on American buying. National of Mexico "B" bonds (1977) at \$50, and the 1951 "B" at \$35 $\frac{1}{2}$  were also higher. There has been some selling of United of Havana stocks by tired holders; the second income stock receded from 35 $\frac{1}{2}$  to 34 and the consolidated stock from 5 $\frac{1}{2}$  to 5 $\frac{1}{4}$ . Antofagasta preference stock came back a point at 46 but the ordinary stock firmed up from 8 to 8 $\frac{1}{2}$ . Nitrate Rail shares eased to 19s. 3d.

Road transports held firm with Lancashire Transport at 61s. 6d. and West Riding 35s. xd., both of which show attractive yields of over 8 per cent. Southdown were 36s. Following the interim dividend, B.E.T. deferred 5s. units have advanced to 69s. 6d.

There was more activity in engineering and kindred shares which developed a number of strong features. T. W. Ward rose from 55s. 6d. to 57s. 9d., Guest Keen with a rise from 65s. 9d. a week ago to 67s. 3d. reflected higher dividend hopes, and Vickers moved up from 39s. 6d. to 40s. 3d. Ruston & Hornsby gained 1s. 3d. at 56s. 3d. and Babcock & Wilcox advanced afresh from 72s. to 74s. 9d. Tube Investments rose to 76s. 9d.

Among shares of locomotive builders and engineers, the yield of over 7 per cent brought in buyers for Beyer Peacock, which, compared with a week ago, have risen from 41s. 9d. to 43s. 6d. Birmingham Carriage were higher at 29s. 1 $\frac{1}{2}$ d., and North British Locomotive strengthened further to 16s. 9d., but Hurst Nelson came back from 39s. 9d. to 38s. 6d. Charles Roberts 5s. shares held steady at 9s. and Wagon Repairs 5s. shares were 13s. 6d. Vulcan Foundry shares eased 3d. at 29s. and Gloucester Wagon 10s. shares remained at 17s.

## OFFICIAL NOTICES

*The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.*

**SENIOR MECHANICAL DRAUGHTSMAN** required. Experience in Railway Trackwork an advantage but not essential. Good rate of pay. Superannuation scheme. Canteen. Box 398, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**B RUSH BAGNALL TRACTION LTD.**, Loughborough Leics., have vacancies for an experienced Design Engineer and a Draughtsman in the Rotating Machine Department for work in connection with diesel electric locomotives. Applicants for the post of Designer should preferably possess an Honours Degree or be Graduate Members of the Institution of Electrical Engineers. Candidates for the post of Draughtsman should preferably hold a Higher National Certificate in Electrical or Mechanical Engineering. These positions call for men able to work with limited supervision and carry attractive salaries plus non-contributory superannuation, sick pay and other benefits. Please apply with full details to the Chief Personnel Officer.

**ASSISTANT TRAFFIC SUPERINTENDENT, RAILWAY DEPARTMENT**, required for the Gold Coast Local Civil Service for two tours each of 18-24 months in the first instance. Non-pensionable. Commencing salary according to experience in salary scale (including expatriation pay) £1,330 rising to £1,680 a year. Outfit allowance up to £60. Gratuity at rate of £150 a year. Free passages. Liberal leave on full salary. Applicants must have a thorough knowledge of electric train staff working, pilot working, double line block system, etc., centralised train control system the working of shunting yards, train running and traffic statistics. They should also have experience of all sections of passenger and goods station working including accounts, rates and fares and claims. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters full qualifications and experience and quote M3B/33427/RA.

**ASSISTANT ENGINEER (MECHANICAL)** required for their London Office by the CROWN AGENTS for Oversea Governments and Administrations. Basic salary scale £650 x £25 to £750 x £30 to £960 x £40 to £1,000 a year plus Extra Duty Allowance of approximately 8 per cent. The £650 minimum is linked to entry at age 25 and is subject to increase at the rate of one increment for each year above that age up to 34. Fully qualified officers at least 27 years old may be eligible for a special increase of £75 within the scale after two years' service. Engagement will be on unestablished terms with prospect of appointment to the established staff after five years and of promotion. Candidates between 25 and 35 years of age, should have had a sound general education and must either be an A.M.I.Mech.E. (preferably in Automobile Division) or have passed the qualifying examination or hold an exempting degree and have served an apprenticeship or pupillage with a firm of Mechanical or Motor Service Engineers with good subsequent practical experience. The duties of the post will include the preparation of contract specifications, examining and approving drawings and tenders, correspondence and general engineering contract work. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M2A/40501/RA.

**RAILWAY MATERIAL.** Plain Sleepers, Chaired Sleepers. Rails of all Sections. Crossing Timbers. We undertake the supply and laying of all classes of siding installations.—The Railroad Plant Supplies Co. Ltd., 13 Waterloo Road, Wolverhampton. Telephone No. Wolverhampton 23617.

**THE** High Commissioner for India invites tenders for the supply of:—28 Axles, Crank, Solid-forged with hoops on the Crank Webs; 2 Axles, Crank, Driving (L.P.), complete (built-up type) for M. Class; 92 Axles, Crank, rough turned (Steel). Forms of tender may be obtained from the Director General, India Store Department, 32/44, Edgware Road, London, W.2 on or after October 29, 1954, at a fee of 10s., which is not returnable. If payment is made by cheque, it should please be made payable to "High Commissioner for India." Tenders are to be delivered by 2 p.m. on Friday, November 26, 1954. Please quote reference No. 259/54/DH/RLY.3.

**INTERNATIONAL RAILWAY ASSOCIATIONS.** Notes on the work of the various associations concerned with international traffic, principally on the European Continent. 2s. By post 2s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**BOUND VOLUMES.**—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press, Limited, 33, Tothill Street, London, S.W.1.